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The specificity of reassurance-seeking to different psychological disorders

Amelia Woodhouse

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Structure and word count

Literature Review

Excluding tables and references: 6,292

Including tables and references: 12,617

Research Report

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Including tables and references: 9,788

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Abstract/Summary

Eating disorders have the highest mortality rate of any mental health diagnosis in the United Kingdom. They are also highly co-morbid with anxiety and depression. It is possible that some of the maintaining factors of anxiety and depression are also present in eating disorders - particularly safety behaviours. One safety behaviour that has received little attention in eating disorders is reassurance-seeking. To enhance understanding of this safety behaviour, specifically in eating disorders, this research set out to: 1. understand the relationship between reassurance-seeking and clinical anxiety and depression; and 2. develop and validate a reassurance-seeking measure specific to eating disorders.

A systematic review identified 19 papers that examined the relationship between reassurance-seeking and clinical depression or anxiety. The findings of this review suggest that the more a person seeks reassurance, the worse their symptoms of anxiety and depression are. Moreover, the pattern of reassurance-seeking across the two diagnoses had several differences (e.g., those with depression seek reassurance about social threats, while those with anxiety seek reassurance about general threats). However, the findings were based on a limited number of papers and thus should be treated cautiously. Limitations and implications for clinical practice are also discussed. Recommendations for future research include the need to investigate reassurance-seeking in other disorders (e.g., eating disorders).

Subsequently, the development and validation of a reassurance-seeking measure specific to eating disorders was undertaken. One hundred and sixty-seven participants completed the Reassurance-Seeking in Eating Disorders Questionnaire (RSED-Q), which was developed for this research. Additional

measures completed by participants addressed anxiety, depression, eating pathology, social anxiety, and general reassurance-seeking. Factor analysis was undertaken on the responses of the RSED-Q. Six factors emerged, which were meaningful both statistically and psychologically. The six factors showed strong internal consistency, good test-retest reliability, acceptable concurrent validity, and strong clinical validation. The RSED-Q predicted eating pathology more strongly than did the more generic measure of reassurance-seeking.

Thus, the RSED-Q was more useful in explaining eating pathology than existing measures of reassurance-seeking. Limitations are discussed, and recommendations are made for addressing reassurance-seeking in clinical practice in eating disorders. Recommendations for future research include using a specific rather than generic measure of reassurance-seeking, and to extend this work into experimental designs to determine causality.

Acknowledgements

Firstly, I would like to thank my research supervisor Professor Glenn Waller for his continued support and prompt responses throughout this project. I would also like to thank our collaborators in Australia, Professor Pete McEvoy, Dr Bronwyn Raykos and Lauren List for their support in the development of the RSED-Q.

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List of Contents

Section 1: Literature Review

Understanding the relationship between reassurance-seeking and clinical anxiety and depression: A systematic review

Abstract

Objectives: Depression and anxiety are the most common mental health difficulty in the United Kingdom. Depression and anxiety are also highly co-morbid and share many of the same risk factors and cognitive features and safety behaviours. One safety behaviour that has received less attention than others is reassurance-seeking. This review aimed to understand the relationship between reassurance-seeking and clinical depression and anxiety.

Method: A systematic review was conducted using Scopus, Embase, Medline, Psychinfo and Web of Science between February and March 2020. Search terms were used to capture literature that utilised clinical populations of depression and anxiety that reported a relationship with reassurance-seeking. The papers were quality appraised, data were extracted, and a narrative synthesis was undertaken.

Results: Nineteen studies were eligible for inclusion in the review and included papers that examined clinically anxious and depressed populations using either correlational or comparison methodologies. Findings of the review suggest that there is an association between reassurance-seeking and both depression and anxiety and that this is dimensional. Differences in reassurance-seeking in depression and anxiety included those with depression seeking reassurance following feelings of sadness and about social threats. Those with anxiety thought more reassurance about general threats

Conclusions: There was a dimensional relationship between reassurance-seeking and anxiety and depression. Additionally, there are differences in the precipitating factors and content of reassurance-seeking across the diagnoses. However, the limited number of papers that used clinical populations means that

the findings much be treated with caution. Differences in patterns of reassurance-seeking across anxiety and depression are discussed in the review, as are limitations and clinical implications. Future research should aim to recruit more clinical populations and should utilise experimental methodology and examine interventions that specifically target reassurance-seeking.

Key words: Clinical, anxiety, depression, reassurance-seeking

Practitioner Points:

- Reassurance-seeking can maintain and worsen symptomology in both anxiety and depression
- Clinicians should consider the interpersonal nature of reassurance-seeking when selecting therapeutic models.
- Clinicians should encourage open discussions about the possible consequences of reassurance seeking and making changes.
- Clinicians should use evidence-based techniques to target reassurance-seeking, such as behavioural experiments or exposure.

Introduction

Within the United Kingdom and National Health Service (NHS), anxiety and depression are the most common mental health diagnoses, with estimates suggesting up to 15% of the population are affected at any one time (National Institute for Health and Care Excellence; NICE, 2011). Anxiety and depression are also commonly found in sub-clinical states. Some prevalence estimates suggest that up to half of the general population experience anxiety (Moffit et al., 2010), while Radloff (1977) found that 21% of general community samples score above cut-off for mild to severe depression.

Cognitive behavioural therapy (CBT) models provide useful explanations of depression and anxiety, which are based on maintenance factors. CBT targets those maintaining problems. Anxiety and depression are commonly co-morbid, sharing many risk factors and cognitive features such as self-critical thoughts and rumination (Joorman, Dkane, & Gotlib, 2006; Trew & Alden, 2009). One commonality between anxiety and depressive disorders is the use of safety behaviours.

Safety behaviours are used by individuals to stop them from experiencing distressing emotions (Skinner, 1971). In the short term, the distress is reduced. However, in the long term the behaviour serves to maintain difficulties (Gelder, 1997; Salkovskis, 1991). For example, an anxious person might avoid leaving the house due to fear of experiencing anxiety when in social situations. This results in a short-term removal of the distressing thoughts and feelings. However, in the long term the person does not have access to experiences that would provide evidence that counters their fears. Thus, the anxiety is maintained. Similarly, someone experiencing depression might experience intrusive memories that they appraise negatively (e.g., “I can’t control my memories, I am a bad person”). They

then engage in safety behaviours such as suppression (Moulds, Kandris, Williams, & Lang, 2008), which prevent them learning that their appraisal is incorrect. Wells et al.'s (2016) CBT model of social anxiety places a similar emphasis on the role of safety behaviours in the maintenance of distress.

While many safety behaviours have been widely researched, there have been fewer studies of the safety behaviour of reassurance-seeking. Individuals engage in reassurance-seeking to gain approval from others, which influences the individual's self-worth (Joiner & Metalsky, 2001; Mason et al., 2016). Much of the research into reassurance-seeking has been conducted around depression and suggests that people can reassurance-seek to alleviate doubts about their self-worth (e.g., Coyne, 1976). People with health anxiety can engage in a maladaptive, interpersonal cycle of health-related reassurance-seeking (e.g. McSwain et. al., 2009). Additionally, reassurance-seeking has also been suggested as a safety behaviour used by those with Obsessive Compulsive Disorder (OCD) to cope with negative intrusions (Morrillo, Belloch, & Garcia-Soriano, 2007). Reassurance-seeking has also been shown to be higher in those with social anxiety. It has been suggested to mediate the link between social anxiety and attentional bias, indicating that reassurance-seeking might be used as a form of social avoidance (Taylor, Kraines, Grant, & Wells, 2019).

Thus, the literature suggests that those with anxiety and depression engage in reassurance-seeking. Many factors that might mediate the link between anxiety or depression and reassurance-seeking have also be investigated, such as abandonment, sociotropy, preoccupied attachment style, causal uncertainty or social rejection (Davilla, 2000; Jacobson & Weary, 1999; Joiner, Alfano, & Metalsky, 1992; Katz & Beach, 1997). However, the picture of reassurance-seeking in depression and anxiety is still unclear.

Reassurance-seeking measures, used across both anxiety and depression, have proposed different factors of reassurance-seeking. The Reassurance-Seeking Scale (RSS; Joiner, Alfano, & Metalsky, 1992) separates reassurance-seeking into three factors - decision making, social attachment and general threat. In contrast, the Depressive and Obsessive Reassurance-seeking Scale (DORSS; Radomsky, Parrish & Dugas, 2009) separates reassurance-seeking into passive and active reassurance-seeking. Many studies of reassurance-seeking in anxiety use a depression-related measure of reassurance-seeking (e.g., the Depressive Interpersonal Relationships Inventory-Reassurance-seeking Subscale (DIRI-RS; Metalsky et al., 1991), suggesting that there is less clarity about how reassurance-seeking presents in anxiety.

Why does this safety behaviour matter? Some studies have found that engaging in reassurance-seeking makes anxiety worse in the long term, leading to threat overestimation (Deacon & Maack, 2008). Others have shown that the interpersonal nature of reassurance-seeking drives people away, thus decreasing access to social resources (Joiner, Metalsky, Katz, & Beach, 1999).

Understanding the concept of reassurance-seeking and its relationship to these disorders could help guide clinical practice and improve outcomes for service users. However, much of the research into both depression and anxiety and reassurance-seeking uses non-clinical, community, or college populations. Within non-clinical samples it is possible that scores on measures represent transient distress. In contrast, using purely clinical populations omits community samples who might include individuals with depression who are not engaged with services (Goodman, Lahey, Fielding, & Dulcan, 1997).

Aim

There has yet to be a systematic review of reassurance-seeking in both depressed and anxious populations with clinical levels of the disorders. This paper therefore reviews reassurance-seeking in the context of clinical and non-clinical populations and among those with clinical levels of depression and anxiety.

The aim of this review was to understand whether clinical presentations of anxiety and depression are associated with reassurance-seeking, and what differences exist (if any) between the associations with anxiety and depression. Initially, a meta-analytic approach was planned. However, several factors mitigated against that approach, including: the limited number of papers available for the review; the hetereogeneity of anxiety diagnoses within the anxiety literature; and the widespread differences in the measures used for depression, anxiety and reassurance-seeking. These issues meant that a meta-analysis would not have yielded meaningful results. Therefore, a systematic review approach was used. Specific questions to be answered were:

1. Is a diagnosis of depression associated with reassurance-seeking?
2. Is a diagnosis of anxiety associated with reassurance-seeking?
3. In people with a diagnosis of depression, is depression dimensionally associated with reassurance-seeking?
4. In people with a diagnosis of anxiety, is anxiety dimensionally associated with reassurance-seeking?
5. Does an intervention for reassurance-seeking impact on anxiety or depression?
6. Are there any differences in the patterns of reassurance-seeking used in anxiety and depression?

Method

Scoping search

An initial search of the Cochrane Database for Systematic Reviews showed that a systematic review had not previously been conducted on this topic. One review was found, addressing reassurance-seeking, depression, and interpersonal rejection (Starr & Davila, 2008). However, that review had different aims and literature coverage to the current one. The current review was registered with Prospero (appendix A).

Search strategy and screening

A systematic literature search was conducted using five databases: *Scopus*, *Embase*, *Medline*, *Psychinfo and Web of Science.* The 'grey' literature was not used, to ensure that high quality literature was used in the review. However, it is understood that excluding the grey literature could bias findings, as those that are published are more likely to have positive outcomes.

Each database was searched from the beginning of the database to March 2020. Boolean search terms were utilised to conduct the search via the titles, abstracts, and keywords of papers on those databases. The terms "Reassurance", "Reassur*", "Seeking", "Seek*", "Depression" and "Anxiety" were used along with the operating terms AND and OR. The asterisk allowed for wildcard searches for key words that had alternative endings.

Inclusion and exclusion criteria (Table 1) were applied to the articles at all stages of the search. To be included in the review, the article must meet all the inclusion criteria. However, only one of the exclusion criteria needed to be met for the article to be excluded. Additionally, owing to the recurrent nature of

depression, papers that included recovered clinical populations were included due to the previous diagnosis of depression.

Figure 1 represents the process of the literature search in a PRISMA diagram (Preferred Reporting Items for Systematic Reviews and Metanalysis - Moher, Liberati, Tetzlaff, & Altman, 2009). In total, 1,396 papers were identified. Following removal of duplicates, 697 papers remained. Screening of title and abstract allowed for a further 584 records to be excluded as they clearly did not meet the inclusion criteria. 113 full text articles were reviewed. Of the 113, 94 papers were then excluded due to using a non-clinical population or majority of sample under clinical cut off (n=42), having multiple diagnoses (e.g., an additional diagnosis of substance misuse) (n=3), describing a different construct of reassurance-seeking (n=3), not including a measure of reassurance-seeking (n=9), using a youth population (n=2), being a single case experimental design (n=2), a case report (n=1) or dissertation (n=16), not using a measure of anxiety or depression (n=4), not reporting a relationship between reassurance-seeking and anxiety or depression (n=3), being unavailable in the English language (n=3), not being a research paper (n=2), or using a population with a different clinical diagnosis (e.g., cancer or an eating disorder) (n=4). Thus, 19 papers were included in the systematic review.

Table 1: *Inclusion and Exclusion Criteria*

Depression	
Inclusion criteria	Exclusion
• Assessment of unipolar depression (either through self-reported measures, interview rated scales, structured or semi-structured interview, or diagnosis acquired through chart review) • Assessment of reassurance-seeking • Provide a correlation co-efficient between reassurance-seeking and depression (Pearson's r) or a pre/post effect size (Cohen's d) • Published in a peer reviewed journal	• Articles relating to "negative affect" or "low mood" rather than depression • Unpublished data and book chapters
Anxiety	
Inclusion criteria	Exclusion
• Assessment of any anxiety disorder (either through self-reported measures, interview rated scales, structured or semi-structured interview, or diagnosis acquired through chart review • Assessment of reassurance seeking • Provide a correlation co-efficient between reassurance-seeking and anxiety (Pearson's r) or a pre/post effect size (Cohen's d) • Must have been published in a peer reviewed journal	• Unpublished data and book chapters

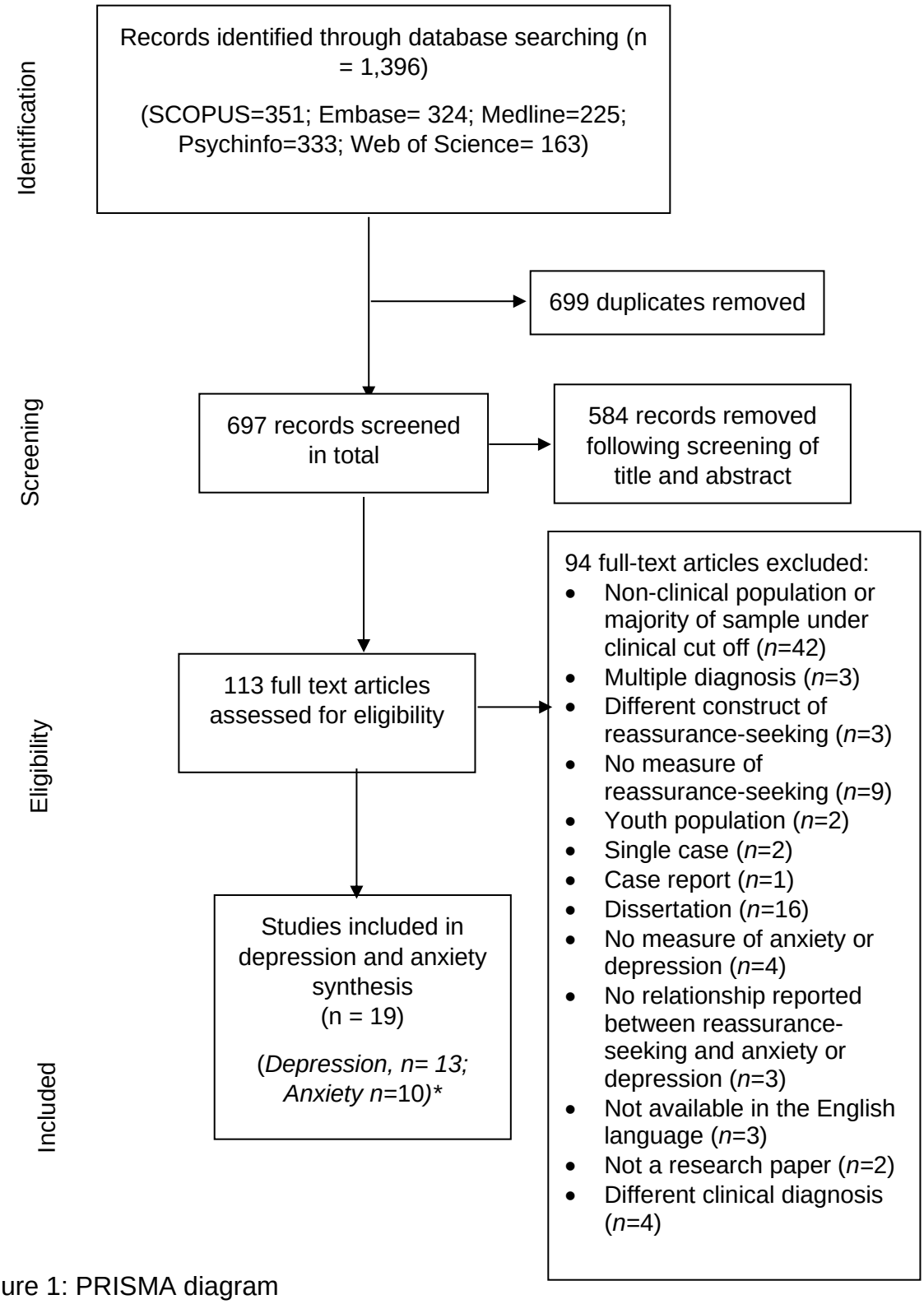

Figure 1: PRISMA diagram

Note: Some papers use both anxiety and depression diagnoses, therefore appear in both.*

Data extraction

Data extracted from the included papers included: authors' names; publication dates; participant characteristics (e.g., sample size, diagnosis, etc.); intervention (if applicable); specific measures of reassurance, depression and anxiety (and any other relevant measures); and main findings (associated with the aims of the review).

Quality assessment

To understand the quality of the literature and to use it to inform the synthesis of findings, each of the included papers was quality assessed. The studies included in the review were a mixture of correlational, comparison and experimental studies. They were assessed using the Downs and Black (1998) quality assessment tool. A variety of quality assessment tools were considered (such as the CASP; Critical Appraisal Skills Programme (2019)) but the Downs and Black tool was chosen as it allowed for multiple different designs to be assessed and rated in a comparable way (e.g. correlational vs comparison). As the Downs and Black tool is regarded positively in the literature (Deeks et al., 2003), this was chosen above others or using an idiosyncratic method.

Each paper was systematically assessed on all appropriate criteria and assigned a quality appraisal score. Both the criteria and scoring system are included in appendix B. When a paper could not be assessed on a criterion (e.g., due to methodology), this was recorded as 'N/A' and deducted from the overall number of items. Scores were then added up and divided by the number of applied criteria, and a percentage score was then calculated to allow for comparability across papers. For this review, the final question of the Downs and Black (1998) tool was changed to reflect whether there was any mention of 'power' in the papers. The following arbitrary classification was developed, based

on the percentage score on the Downs and Black measure - <59% was rated as “poor”, 60-69% was rated as “fair”, 70-79% was rated as “good” and >80% was rated as “excellent”.

Inter-rater reliability was assessed using a sample of four randomly selected papers from the cohort (21%). These four papers were independently assessed by a peer, using the same quality assessment tool. The second rater was blind to the first rater’s scores. Any discrepancy in rating was discussed and resolved prior to agreement on a final quality assessment score.

Results

Following application of inclusion and exclusion criteria, 19 papers were included in this review. Table 3 provides a summary of the study characteristics and outcomes, which are grouped in accordance to their study design (e.g., correlational vs comparison) and their population (depression vs anxiety). Some of the studies appear in both the depression and anxiety groups due to the population sampled.

Quality appraisal

To assess inter-rater reliability, the results of both the reviewers’ quality assessments were entered into an SPSS file. Each of the responses was coded (0 = no; 1 = yes; 2 = unable to determine; 3 = not applicable). An inter-class correlation (ICC) coefficient was used to determine their level of agreement. The result (ICC = .772, p = .001) suggests that the agreement between the two raters was good, indicating that the quality appraisal process was reliable.

Table 2 shows that: two papers were rated as ‘poor’ (Joiner & Metalsky, 2001; Rector et al., 2019); nine were ‘fair’; two were ‘good’ (Beesdo-baum et al.,

2012; Parrish & Radomsky, 2010); and six were ‘excellent’. The full results of the quality assessment can be found in Appendix B.

Table 2: *Number of papers and their quality assessment rating.*

Poor	Fair	Good	Excellent
<59%	60-69%	70-79%	>80%
n=2	*n*=9	*n*=2	*n*=6

Study characteristics

Table 3 shows the characteristics of the individual papers. The key characteristics are summarised here.

Participants. The total number of participants across all 19 papers was 3,193. Sample size ranged from 50 to 738 participants. All studies recruited a clinical sample (including recovered individuals, participants who scored in the clinical range of the clinical measures, or met diagnostic criteria of an anxiety or depression disorder despite not being from a clinical source).

Participants were recruited from several different countries including United States of America (*n*=9), Japan (*n*=3), Canada (*n*=4) South Korea (*n*=1), Germany (*n*=1), Turkey (*n*=1). Disorders included: depression (*n*=713); dysthymia/dysphoria (*n*=114); historical/recovered depression (*n*=87); specific phobia (*n*=8); post-traumatic stress disorder (PTSD; *n*=1); panic attack disorder (*n*=222); general anxiety disorder (*n*=351); social phobia (*n*=412); or obsessive compulsive disorder (*n*=432). Additionally, one paper did not include specific numbers of participants who met diagnostic criteria but did report that 51% scored

above clinical range on the DASS-21 and 22% met current diagnostic criteria for major depressive disorder (Starr, 2015). Some papers also included a healthy control group who did not have any diagnosis (*n*=60). Although there were more papers that reported on depression, the overall sample size for anxiety disorders was much greater than the depression sample.

Two papers used the same sample (Kobori & Salkovskis, 2013; Salkovskis & Kobori, 2015). Both papers were included as the 2015 paper provided additional analysis, information and understanding. The number of participants are only recorded once in the above count.

Intervention. Only two papers described the use of formal interventions - cognitive behaviour therapy (CBT: Rector et al., 2019) and exposure and applied relaxation (Beeso-baum et al., 2012). Interventions were applied in routine clinical settings. Neither study directly targeted reassurance-seeking. However, both did reduce this behaviour. Other tasks included the Behavioural Reassurance-Seeking Task (BRST), modelled after Joiner and Metalsky (2001), in which participants were given false feedback regarding their partners' opinions of their personality and then their reassurance-seeking was observed (Stewart & Harkness, 2016).

Depression measures*:* All studies measured depression using standardised questionnaires. On the standardised self-reported measures, higher scores equalled greater symptom severity. Measures of depression included: different versions of The Beck Depression Inventory (BDI-II; Beck, Steer, Ball, & Ranieri, W, 1996, *n*=10; BDI-SF; Beck & Beanesderfer, 1974, *n*=1; BDI-IA; Beck & Steer, 1993, *n*=1; BDI, Beck & Steer, 1987, *n*=2); the Diagnostic Interview Schedule (Regier et al., 1984; *n*=3); the Structured Clinical Interview for DSM-IV (SCID; First, Spitzer, Gibbon, & Williams, 1995; *n*=1); the Inventory to

Diagnose Depression, Lifetime version (IDD-L; Zimmerman & Coryell, 1987, *n*=1); the depression subscale of the trait version of the Multiple Affect Adjective Check List-Revised (MAACL-R; Zuckerman & Lubin, 1985, *n*=1); the MDE section of the Mini-International Neuropsychiatric Interview (MINI; Sheehan et al., 1998, *n*=1); Centre for Epidemiological Studies-Depression scale (CES-D; Radloff, 1977, *n*=1); and the Depression Anxiety Stress Scales-21 (DASS-21; Lovibond & Lovibond, 1995, *n*=1) . One study used an additional, non-standardised measure of depression, based on a single question. This measured daily depressed mood on a Likert-like scale (Starr, 2015). Some of the studies utilised a self-report questionnaire alongside an interview-based assessment. One paper used the Diagnostic Interview Schedule but no dimensional measure of depression (Joiner & Metalsky, 2001), and another used the Centre for Epidemiological Studies-Depression scale (CES-D; Radloff, 1977) but no dimensional measure of depression.

Anxiety measures: All studies measured anxiety using standardised questionnaires. On each, higher scores reflected greater symptom severity. Anxiety measures included: the Beck Anxiety Inventory (BAI; Beck, Epstein, Brown, & Steer, 1988, *n*=4); the Obsessive-Compulsive Inventory (Foa, Kozak, Salkovskis, Coles & Amir, 1998, *n*=1); the Diagnostic Interview schedule (Regier et al., 1984, *n*=1); the Anxiety Disorders Interview Schedule for DSM-IV (ADIS-IV; Brown, Di Nardo, & Barlow, *n*=1); the Yale-Brown Obsessive-Compulsive Scale (Y-BOCS; Goodman et al., 1989, *n*=2); the Social Interaction Anxiety Scale (SIAS; Mattick & Clarke, 1998, *n*=1); the Korean version of the State Trait Anxiety Inventory (STAI: Kim, 1978, *n*=2); the Structured Clinical Interview for Diagnostic and Statistical Manual (SCID; First, Spitzer, Gibbon, & Williams, 1996, *n*=1); the Penn State Worry Questionnaire (PSWQ; Meyer, Miller, Metzger, & Borkovec,

1990, *n*=1); the Panic Disorder Severity Scale–Self Report (PDSS-SR; Shear et al., 1997, *n*=1); the Hamilton Anxiety Scale (HAMA; Hamilton, 1959, *n*=1); Obsessive-Compulsive Inventory-Revised Form (OCI-R; Foa et al., 2002, *n*=1), and the Obsessive Compulsive Inventory Distress scale (OCI-D; Foa, Kozak, Salkovskis, Coles & Amir, 1998, *n*=1). Due to using samples with different anxiety disorders, many of the papers utilised more than one measure of symptom- and diagnosis-specific anxiety (as shown in Table 3). Additionally, as above, one study utilised the Diagnostic Clinical Interview but no dimensional measure of anxiety (Joiner & Metalsky, 2001).

Reassurance-seeking measures. Most of the studies used a validated, self-report questionnaire to measure reassurance-seeking. Two studies instead opted for an idiosyncratic measure. Knobloch et al. (2011) utilised four judges to assessed reassurance-seeking, while Beesdo-baum et al. (2012) used a single item on a questionnaire that measured GAD symptoms. Two other papers utilised idiosyncratic measures of reassurance-seeking alongside a more formal measure (i.e., a diary measure - Starr, 2015; a behavioural reassurance-seeking task - Stewart & Harkness, 2016). Self-report measures of reassurance-seeking included: the Depressive Interpersonal Relationships Inventory-Reassurance-seeking Scale (DIRI-RS; Metalsky et al., 1991, *n*=7); the Excessive Reassurance-Seeking Scale (ERSC; Joiner, 1994, *n*=1); the Reassurance-Seeking Questionnaire (ReSQ; Kobori & Salkovskis, 2013, *n*=3); the Interview for Compulsive Checking and Reassurance-Seeking behaviours (ICCRS; Parish & Randomsky, 2010, *n*=1); and the Reassurance-Seeking Scale (RSS; Rector et al., 2011, *n*=3).

Table 3: *Characteristics, outcomes, and interpretations of the included articles*

Note: some of the papers appear in both the depression and anxiety sections

Paper	Participants	Reassurance-seeking measure	Depression measure	Anxiety measure	QA	Outcome and interpretation
Depression population: Comparison						
Bistricky et al (2016)	Two groups of undergraduate students (n=66): those with a history of past major depressive episode but no current symptoms and a health control group (n=33)	Depressive Interpersonal Relationships Inventory-Reassurance-seeking Scale (DIRI-RS; Metalsky et al., 1991)	Beck Depression Inventory-II (BDI-II; (Beck et al., 1996)		**84%**	*Outcome*: ANCOVA analysis revealed that the only variable that was significantly related to depression was greater reassurance-seeking: F(1, 63) = 4.89, p = .031. *Interpretation*: **Those who have recovered from depression engage in greater reassurance-seeking.**
Luxton and Wanzlaff (2005)	228 American students were split into three depression status groups: at-risk, never depressed and dysphoric. Scoring below 8 on the BDI but above 40 on the IDD-L was classified as at risk (*n*=29). Scoring below 8 on the BDI and below 40 on the IDD-L was classified as "never depressed" (*n*=121). Scoring above 7 on the BDI was classified as dysphoric (*n*=78).	Excessive Reassurance-Seeking Scale (ERSC; Joiner, 1994)	Beck Depression Inventory (BDI-SF; Beck & Beanesderfer, 1974) The inventory to diagnose depression, lifetime version (IDD-L; Zimmerman & Coryell, 1987).		**63%**	*Outcome:* A 3 x 2 ANOVA was used to analyse ERSC and Depression status found a reliable main effect for depression status was (F(2, 225) =6.42, p<.01). The "at-risk" and "dysphoric" group reported more reassurance-seeking then the "never depressed group". There was no main effect of sex, but an interaction between sex and depression was found. At risk men and dysphoric females engaged in higher reassurance-seeking F, (1, 27) =6.26, *p* <.05 and *F* (1, 76) = 5.09, *p* <.05. *Interpretation:* **Those at risk of depression or "dysphoric" engage in more reassurance-seeking. Males who are "at risk" of depression engage in more reassurance-seeking than their female counterparts.**
Kobori et al (2015)	Japanese participants were recruited through	Reassurance-Seeking	Beck Depression	Obsessive-Compulsive	**63%**	*Outcome:* The findings show that except for the trust scale, the ReSQ scales had low to moderate correlations with the OCI total

	a university and a university outpatient hospital and formed three groups; OCD group (*n*=32); Depression group (DEP: *n*= 17); healthy comparison group (HC: *n*= 29).	Questionnaire (ReSQ; Kobori and Salkovskis 2013).	Inventory-II (Beck, Steer and Brown, 1996).	Inventory (Foa, Kozak, Salkovskis, Coles and Amir, 1998).		score and the BDI-I. There was a significant effect of group on all the subscales. Follow up analysis revealed that the OCD group scored higher on the intensity subscale in comparison the healthy controls. Additionally, the three groups scored differently on several the subscales. Source: DEP scored higher than HC on the professionals; the OCD scored higher than both groups on self-reassurance; DEP groups scored higher on external reference scale than the OCD. Trust: DEP scored higher on trust in health professionals than the HC group. Intensity: OCD group scored higher on direct reassurance-seeking from people (when compared to the DEP and HC groups) and higher on self-reassurance (than the HC group). Carefulness: OCD group scoring higher on becoming critical than the HC group; DEP group scored higher on careful listening than the HC group. *Interpretation*: **The content, context and target of reassurance differs between disorders. Depressed individuals seek reassurance from health professionals, trusting the reassurance, and check that they have understood the reassurance.**
Joiner and Metalsky (2001)	135 undergraduates were assigned diagnoses based on the Diagnostic Interview schedule ((Regier et al., 1984). Major depression (*n*=11), dysthymia (*n*=4); Anxiety disorder (*n*=20); substance abuse (*n*=28); Bipolar disorder, manic *(n*=4); , and Schizophrenia (*n*=1); no diagnosis (*n*=67).	The Depressive Interpersonal Relationships Inventory-Reassurance-seeking Subscale (DIRI-RS; Metalsky et al., 1991)	Diagnostic Interview Schedule (Regier et al., 1984)	Diagnostic Interview Schedule (Regier et al., 1984)	**57%**	*Outcome:* The depressed group scored significantly higher in reassurance-seeking than the other-disorders group. The depressed group achieved higher reassurance-seeking scores than the anxious group, which approached statistical significance. *Interpretation:* **Those with a diagnosis of depression engage in more reassurance-seeking than those with other mental health diagnoses.**
Parrish and Radomsky 2010	Three groups OCD but not currently depressed (*n*=15); Major depressive disorder but	Interview for Compulsive checking and reassurance-	BDI-II (Beck, Steer & Brown, 1996)	BAI (Beck and Steer, 1993) Anxiety	**79%**	*Outcome:* The OCD and MDD groups reported more anxiety, perceived threat and greater sadness than the HC prior to reassurance-seeking but did not differ from each other in the level of anxiety or perceived threat. The MDD group had significantly more

	not experiencing OCD (*n*=15); Healthy control group (*n*=20).	seeking behaviours (ICCRS; developed in this study)		Disorders Interview Schedule for DSM-IV (ADIS-IV; Brown et al., 1994) Yale-Brown Obsessive-Compulsive scale (Y-BOCs; Goodman et al., 1989).		sadness than the OCD group. There were no differences between the three groups on the perceived responsibility, ambiguity of feedback and believability of feedback. The content of reassurance-seeking also differed between the clinical groups, with OCD group reassurance-seeking about general threats, as opposed to the depressed group reassurance-seeking about social threats. *Interpretation:* **Those with depression experience greater sadness prior to reassurance-seeking than those with anxiety. Those with depression seek reassurance about social threats.**
Joiner et al. (2001)	Inpatients (*n*=226). Separated out into groups of diagnosis: depression: *n*=56; dysthymia *n*=16; Anxiety disorder *n*=22; Substance misuse *n*=42; Bipolar disorder *n*=23; Schizophrenia *n*=61, 14 participants received no diagnosis.	The Depressive Interpersonal Relationships Inventory-Reassurance-seeking Subscale (DIRI-RS; Metalsky et al., 1991)	Diagnostic Interview Schedule (Regier et al., 1984) Beck Depression Inventory (BDI;Beck,Rush,Shaw, & Emery, 1979; Beck & Steer, 1987)	Diagnostic Interview Schedule (Regier et al., 1984)	**66.6%**	*Outcome:* A significant association between group and reassurance-seeking. With the depression group receiving higher scores than the other diagnosis groups. (t [1,91] = 2.49, p <.05. ***Interpretation:*** **A diagnosis of depression is associated with higher levels of reassurance-seeking.**
Haciomeroglu & Inozu (2019)	Five groups of participants based on their diagnosis OCD (*n*=53); Anxiety disorders (*n*=73); Major depression (*n*=67) and health controls (*n*=110)	Reassurance-seeking Questionnaire (RSS; Kobori and Salkovskis, 2013)	Beck Depression Inventory II (BDI-II: Beck et al., 1996)	Obsessive-Compulsive Inventory-Revised Form (OCI-R; Foa et al.,2002). Stait Trait Anxiety Inventory-Trait Form (STAI-T; Spielberger et al., 1970)	**66.6%**	*Outcome:* Groups (OCD, AC, DC and HC) were compared across the RSS Results indicated a main effect of group. With the OCD group scoring higher on all subscales. Additionally, all subscales except the external reference subscale had a main effect of group. The OCD group scored higher on: involving other people in reassurance, professionals and self-reassurance compared with the DC and HC groups. OCD group scored significantly higher on the Direct seeking reassurance from people compared to the AC. Trust: the OCD group scored higher on trust in people and health professionals that the DC and HC. Intensity: OCD group scored higher on external reference, compared to AC and HC. Carefulness: OCD group scored higher on caring for other people than all 3 controls.

						Interpretation: **compared to an OCD group those with depression seek less reassurance.**
Depression population: Correlational						
Kwon, Lee & Kwon (2017)	83 participants recruited in South Korea university hospitals. 28 with a diagnosis of current Major Depressive Disorder (MDD group), 24 with a lifetime history of at least one diagnosed depressive episode but in whom depression had remitted (RMD group), and 31 healthy nonpsychiatric controls (NC group).	Depressive interpersonal relationships inventory-Reassurance-seeking subscale (DIRI-RS; Coyne, 1976).	Beck Depression Inventory-II; (BDI-II; Beck, Steer, & Brown, 1996)	A Korean version of the State Trait Anxiety Inventory was used (STAI: Kim, 1978).	**63%**	*Outcome:* Significant effects for group excessive reassurance-seeking subscales were found F (2, 82) = 7.61, p < .01, h2 = .16. Post hoc tests showed that the MDD group scored higher on the RS subscale then the other two groups. Zero order correlations between the variables showed that the BDI and DIRI-RS; the STAI-S and DIRI-RS and the STAI-T and DIRI-RS were all significantly related r =.47, .42 and .47 respectively (*p*<.001). *Interpretation:* **Those with major depressive disorder reassurance seek more than those who have recovered from depression and healthy controls. The more depressed and anxious a person is, the more they reassurance seek.**
Hudson et al (2018)	122 participants in two groups depressed (*n*=31) nondepressed (*n*=91). Depressed participants needed to meet criteria for a current episode of a unipolar depressive disorder based on a structured diagnostic interview.	The Depressive Interpersonal Relationships Inventory-Reassurance-seeking Subscale (DIRI-RS; Metalsky et al., 1991)	The Beck Depression Inventory- II (BDI-II; Beck et al., 1996)		**63%**	*Outcome:* Higher BDI-II scores were significantly associated with higher DIRI-RS score (r= .52**) *Interpretation:* **Those who are experiencing higher levels of depressive symptoms engage in more reassurance-seeking.**
Benazon 2000	Outpatients at a university clinic (*n*=89) that treated mood disorders. Patients and their spouses received a diagnostic clinical interview. They either	Depressive Interpersonal Relationships Inventory--Reassurance-Seeking Subscale (DIRI;	Structured Clinical Interview for DSM-IV (SCID; First, Spitzer, Gibbon, &		**86%**	*Outcome*: Bivariate correlation between depression and DIRI *r*=.11 which was not significant. DIRI and spouse depression were also nonsignificant *r*=.13 *Interpretation***: Level of depression is not associated with level of reassurance-seeking. An individual's level of depression and level of reassurance-seeking is also not associated with spouse mood.**

	met the current criteria for Major depressive disorder (MDD) *n*= 43, dysthymic disorder *n*=16 or remained in treatment whilst meetings criteria for past MDD (*n*=30).	Metalsky et al., 1991)	Williams, 1995) Depression subscale of the trait version of the Multiple Affect Adjective Check List-Revised (MAACL-R; Zuckerman & Lubin, 1985)		
Knobloch et al 2011	69 heterosexual couples (n=138) recruited from an outpatient clinical sample receiving marriage or family therapy. 61% of couples were at least one person in the couple experienced depression or met criteria for mild to moderate depression. None to mild range *n*=61; Mild to moderate *n*=45; Moderate to severe *n*=22 and Severe *n*=10.	Four judges assessed reassurance-seeking by responding to an item that read: ‘‘During this interval, the individual sought reassurance ranging from0=‘‘not at all’’ to 5= extremely’’.	The Beck Depression Inventory (BDI-IA; Beck & Steer, 1993)	**63%**	*Outcome:* Reassurance-seeking and depressive symptoms, in males, were positively significantly correlated *r*= .31, *p* <.05. For females, the associated was not significant *r*= .22. However, an “actor’s” and a partner’s depressive symptoms were positively associated with an actor’s reassurance-seeking. *Interpretation:* **For both individuals in a relationship, low mood is associated with increased reassurance-seeking.**
Starr 2015	51 undergraduates who with elevated scores on the Depression Anxiety Stress Scales-21 (DASS-21; Lovibond & Lovibond, 1995) 51% scored within the	Depressive Interpersonal Relationships Inventory-Reassurance-seeking subscale (DIRI-	MDE section of the Mini-International Neuropsychiatric Interview (MINI; Sheehan et	**93%**	*Outcome:* Major depression and baseline excessive reassurance-seeking, and daily mood and baseline reassurance-seeking were not significantly correlated *r*=.15 and *r*= .24 respectively. Major depression and daily depression were also not significantly correlated with daily reassurance-seeking *r*=.08 and .01 respectively. However, higher scores of daily RS did predict higher scores of

	clinical range (5+) on the DASS-21 depression subscale at baseline, and 22% met current diagnostic criteria for major depressive disorder (MDE)	RS; see Joiner & Metalsky, 2001 Daily RS diary "Over the course of the day today, I sought reassurance from someone I feel close to about whether they really care about me."	al., 1998)-depression Daily Depressed Mood was assessed using a single item that asked participants how depressed they felt over the course of the day on a ten-point Likert-type scale. Depression Anxiety Stress Scales-21 (DASS-21; Lovibond & Lovibond, 1995)			same day depression (b = .47, SE = .19, p = .018), mediated by higher base line reassurance-seeking (b = .69, SE = .12, p < .001) but not low baseline RS ERS (b = -.05, SE = .18, p = .776). *Interpretation:* **Major depression and daily depression are not associated with trait and daily reassurance-seeking. However higher trait reassurance-seeking predicts a strong association between greater levels of daily reassurance-seeking and daily mood.**
Rector et al (2011)	283 participants who met the criteria for an anxiety disorder. Social phobia (n=116); Generalised anxiety disorder (n=75); Panic disorder (n=50) and Obsessive-compulsive disorder (n=42). With 11% of the sample also having a concurrent diagnosis of depression.	Reassurance-seeking scale. (developed in this paper)	Beck depression inventory (BDI-II) (Beck et al 1996)	BAI (Beck and steer 1993) And depression and anxiety stress scale.	**63%**	*Outcome:* Scores for the three factors of the RSS were significantly positively correlated with the DASS, BAI and the BDI-II. RSS (decisions) and BAI r= .28; RSS (attachment) and BAI r= .22; RS (threat) and BAI = .42. RSS (decisions) and BDI =.45; RSS (attachment) and BDI= .40; RSS (threat) and BDI= .37 (all *p*<.001). *Interpretation:* **Increased reassurance-seeking is associated with increase anxiety and depression. There are no significant differences in type of reassurance-seeking and depression.**

Stewart and Harkness (2016)	A total of 121 couples participated. Couples who scored above clinical cut off for mild depression on the BDI (>14) were classified as "high" depression (*n*=75) and "low" depression (*n*=46).	Depressive Interpersonal Relationships Inventory-Reassurance-seeking subscales (DIRI-RS Joiner et al., 1992). Behavioural reassurance-seeking task (BRST) modelled after Joiner and Metalsky (2001)	Beck Depression Inventory-II (BDI-II; Beck et al., 1996).		**83%**	*Outcome:* Reassurance-seeking in woman with high classified depression (M= 2.93,SD =3.13) and with low classified depression (M=2.68, SD=2.49) did not significantly differ during the reassurance-seeking task *t*(116)=.48, p=.634, d=.091. Woman's level of reassurance-seeking (both trait and behavioural) was not significantly correlated to males' level of depression (*r*=-.10) *Interpretation:* **Depression levels are not linked to increased reassurance-seeking and do not impact on partner mood.**
Hill, Taroslavsky and Petitit (2015)	218 students who screened positive for moderate to severe depression on the Centre for Epidemiological Studies- Depression scale (CES-D; Radloff, 1977)	The Depressive Interpersonal Relationships Inventory-Reassurance-seeking Subscale (DIRI-RS; Metalsky et al., 1991)	Centre for Epidemiological Studies-Depression scale (CES-D; Radloff, 1977)		**83.3%**	*Outcome:* Excessive reassurance-seeking was not significant predictors of latent class membership (excessive reassurance-seeking: b=.08, p=.18, OR=.93, 95% CI .83, 1.03 ***Interpretation:*** **Reassurance-seeking does not predict persistent depression.**
Anxiety population: comparison						
Salkovskis and Kobori 2015	257 participants split into three groups based on diagnosis. ODC(n=153); panic (n=50); and non-clinical (n=54)	Reassurance-Seeking Questionnaire (ReSQ; Kobori and Salkovskis 2013)	Beck Depression Inventory (Beck and streer 1987)	Obsessive compulsive inventory distress scale (OCI-D; Foa, Kozak, Salkovskis, Coles & Amir, 1998). Beck anxiety inventory (Beck et al 1988)	**86%**	*Outcome:* Repeated measures ANOVA significant main effect of group. Follow up analysis revealed that the OCD and AC groups had higher anxiety after reassurance-seeking but no reassurance given. Alongside this, the OCD and AC rated their anxiety higher in the long term, but not the short-term which was not found in the HC group. Regardless of group there was evidence that in the short-term participants given reassurance felt reassured, but that giving reassurance had a greater impact on the long term than not giving reassurance. Additionally, those with OCD reported having significantly stronger urges to reassurance seek than those in the anxiety group or the healthy controls. Also, when reassurance was not given, those in

				Structured Clinical Interview for Diagnostic and statistical Manual (SCID; First, Spitzer, Gibbon, & Williams, 1996).		the OCD and Anxiety group reported their anxiety to be at higher levels than those in the healthy control. *Interpretation:* **Those with anxiety disorders, including OCD, are more anxious when they reassurance seek, and no reassurance is given. Additionally, reassurance-seeking relieves anxiety in the short term, but leads to a longer-term increase.**
Kobori and Salkovskis (2013)	153 individuals who met the DSM-IV criteria for a principal diagnosis of OCD (OCD group); 50 individuals who met the DSM-IV criteria for a principal diagnosis of panic disorder with or without agoraphobia (AC group); and 54 healthy controls for the control group (HC group); Same sample as above but additionally analysis.	Reassurance-Seeking Questionnaire (ReSQ; Kobori and salkovskis 2013)	Beck Depression Inventory (BDI; Beck and Steer, 1987) is a 21-item self-report measure of depression severity.	Beck Anxiety Inventory (BAI; Beck, Epstein, Brown and Steer,1988) Obsessive-Compulsive Inventory-Distress scale (OCI; Foa, Kozak, Salkovskis, Coles and Amir, 1998) is a 42-item measure of OCD symptoms.	**63%**	*Outcome:* There was a significant main effects for Group, F(8, 474)=4.960, p<.001 and follow-up analysis showed significant main effects for group on all the scales. Post hoc tests showed that the OCD group had higher scores on the Intensity and Carefulness scales compared to the AC and HC groups. OCD group scored higher on Trust scale relative to the HC group, and the OCD and AC groups scored higher on Source than the HC group. *Interpretation:* **Those with a diagnosis of OCD and panic disorder reassurance-seeking more than healthy controls. Those with OCD reassurance seek more repetitively, carefully, and intensely through "self-reassurance" than those with panic disorder. Additionally, the care with which a person takes in their reassurance-seeking predicts OCD and checking.**
Kobori et al (2015)	N=32 for the OCD sample; n= 27; Depression sample; n= 29 for the healthy comparison group	ReSQ (Kobori and Salkovskis 2013	Beck Depression Inventory-II (Beck, Steer and Brown, 1996).	Obsessive-Compulsive Inventory (Foa, Kozak, Salkovskis, Coles and Amir, 1998)	**63%**	*Outcome:* The ReSQ scales had low to moderate correlations with the OCI total score and the BDI-I, except the trust scale. A significant effect of group was found on the subscales, with analysis showing the OCD group scoring higher than then health controls on the intensity subscales. Professionals: the depression group scored higher than health controls; External Reference: the depression group scored higher the two other groups; Trust: the depression group scored higher on trust in professionals than the health controls; Intensity: the OCD group scored higher on direct reassurance-seeking from people (compared to DEP and HC) and higher on self-reassurance (compared to the HC); Carefulness: the OCD group scored higher on becoming critical (compared to DEP and HC) the DEP group scored higher on careful listening (compared to HC).

						Interpretation: **The content, context and target of reassurance is different for different disorders. Those with OCD directly seek reassurance from other people, self-reassure more and become more critical with those they seek reassurance from.**
Rector et al (2019)	Participants (N = 738) where those who received a primary diagnosis based upon the disorder that was found to be most distressing and impairing at the time of the assessment, including PD/A (n = 167), SAD (n = 287), GAD (n = 147 and OCD(n=137).	Reassurance-seeking Scale (RSS; Rector et al., 2011)	Beck Depression Inventory-II (BDI-II; Beck, Steer, & Brown, 1996)	Beck Anxiety Inventory (BAI; Beck, Epstein, Brown, & Steer, 1988 And Yale-Brown Obsessive-Compulsive Scale – Self Report (YBOCS-SR; Goodman, Price, Rasmussen, Mazure, Delgado et al., 1989; Goodman, Price, Rasmussen, Mazure, Fleischmann et al., 1989) Panic Disorder Severity Scale – Self Report (PDSS- SR; Shear et al., 1997) Penn State Worry Questionnaire (PSWQ; Meyer, Miller, Metzger, & Borkovec, 1990)	**59%**	*Outcome:* The three subscales of the RSS dimensions were significantly correlated with the BAI, BDI-II, and SIAS at baseline. Higher scores on the RSS was associated with greater symptom severity. The general threat subscale was significantly positively correlated with all measures. The Y-BOCS and PDSS were significantly positively correlated with the decision-making subscale of the RSS, while the PSWQ and the SIAS were significantly correlated with the social attachment subscale of the RSS all p's<0.05. Additionally, a significant effect of diagnosis on RSS subscales was found. Participants with PD/A had significantly lower decision-making scores than all other diagnoses. Participants with PD/A and OCD had significantly lower social attachment scores than those with SAD or GAD, and participants with SAD had significantly lower global threat scores than those with GAD (*p's*<.05). **CBT treatment and reduction of ERS:** There was a significant effect of time on the decision-making subscale, indicating that this RSS domain significantly changed over treatment. Additionally, diagnosis was also a main effect over time for the RSS global threat subscale. Comparisons between means of RSS subscales of global threat and decision making, pre- and posttreatment, suggest that pre-treatment mean scores were comparable, regardless of diagnosis. However, post-treatment, mean global threat scores for those with OCD was significantly lower than participants with PD/A, which also predicted symptom severity scores. *Interpretation:* **Higher levels of depression and anxiety are associated with higher levels of reassurance-seeking. A CBT intervention did can reduce reassurance-seeking which predicts a reduction in anxiety symptom specific measures.**

				Social Interaction Anxiety Scale (SIAS; Mattick & Clarke, 1998)		
Joiner and Metalsky (2001)	135 undergraduates were assigned diagnoses based on the Diagnostic Interview schedule ((Regier et al., 1984). Major depression (*n*=11), dysthymia (*n*=4); Anxiety disorder (*n*=20); substance abuse (*n*=28); Bipolar disorder, manic *(n*=4); , and Schizophrenia (*n*=1); no diagnosis (*n*=67).	The Depressive Interpersonal Relationships Inventory-Reassurance-seeking Subscale (DIRI-RS; Metalsky et al., 1991).	Diagnostic Interview Schedule (Regier et al., 1984; see, e.g., Rudd et al., 1996, for reliability and validity)	Diagnostic Interview Schedule (Regier et al., 1984; see, e.g., Rudd et al., 1996, for reliability and validity)	**57%**	*Outcome:* The depressed group scored significantly higher in reassurance-seeking than the other-disorders group F (1, 66) 4.09, p .05,2 .06.). The depressed group achieved higher reassurance-seeking scores than the anxious group, which approached statistical significance. *Interpretation:* **Those with a diagnosis of anxiety disorders have lower levels of reassurance-seeking than those who are depressed.**
Parrish and Radomsky 2010	Three groups OCD but not currently depressed (*n*=15); Major depressive disorder but not experiencing OCD (*n*=15); Healthy control group (*n*=20).	Interview for Compulsive checking and reassurance-seeking behaviours (ICCRS; developed in this study)	BDI-II (Beck, Steer & Brown, 1996)	BAI (Beck and Steer, 1993) Anxiety Disorders Interview Schedule for DSM-IV (ADIS-IV; Brown et al., 1994)	**79%**	*Outcome:* The OCD and MDD groups reported more anxiety, perceived threat, and greater sadness than the HC prior to reassurance-seeking but did not differ from each other in the level of anxiety or perceived threat. The MDD group had significantly more sadness than the OCD group. There were no differences between the three groups on the perceived responsibility, ambiguity of feedback and believability of feedback. The content of reassurance-seeking also differed between the clinical groups, with OCD group reassurance-seeking about general threats, as opposed to the depressed group reassurance-seeking about social threats. *Interpretation:* **Anxiety, sadness and perceived threat preceded the urge to reassurance seek in OCD and those with anxiety seek reassurance about general threats.**
Beesdo-baum et al (2012)	German GAD patients who had completed treatment (n= 56) and health controls (*n*=33)	No formal measure of reassurance-seeking, instead		Hamilton Anxiety Scale (HAMA)	**74%**	*Outcome:* Compared to healthy control's participants with GAD engaged in significantly more reassurance-seeking prior to treatment. Following a worry exposure and applied relaxation therapy manualized treatment, regression analysis showed that

		it was measured on using one item in a list of questions about GAD symptoms.				reassurance-seeking decreased significantly. Additionally those with GAD who receives applied relaxation, had significantly decreased reassurance-seeking scores than those who received worry exposure (MD=–1.42, 95% CI: –2.76 to –0.08, P = .038) which remained following controlling for comorbidity. *Interpretation:* **Those with GAD engage in significantly more reassurance-seeking than their healthy counter parts. Applied relaxation can effectively reduce reassurance-seeking more than worry exposure.**
Haciomeroglu & Inozu (2019)	Five groups of participants based on their diagnosis OCD (*n*=53); Anxiety disorders (*n*=73); Major depression (*n*=67) and health controls (*n*=110)	Reassurance-seeking Questionnaire (RSS; Kobori and Salkovskis, 2013)	Beck Depression Inventory II (BDI-II: Beck et al., 1996)	Obsessive-Compulsive Inventory-Revised Form (OCI-R; Foa et al.,2002). Stait Trait Anxiety Inventory-Trait Form (STAI-T; Spielberger et al., 1970)	**66.6%**	*Outcome:* Groups (OCD, AC, DC and HC) were compared across the RSS Results indicated a main effect of group. With the OCD group scoring higher on all subscales. Additionally, all subscales except the external reference subscale had a main effect of group. The OCD group scored higher on: involving other people in reassurance, professionals and self-reassurance compared with the DC and HC groups. OCD group scored significantly higher on the Direct seeking reassurance from people compared to the AC. Trust: the OCD group scored higher on trust in people and health professionals that the DC and HC. Intensity: OCD group scored higher on external reference, compared to AC and HC. Carefulness: OCD group scored higher on caring for other people than all 3 controls. ***Interpretation:*** **Those with OCD seek reassurance more than other anxiety disorder, healthy controls, and those with depression. Those with OCD involve other people in their reassurance and seek reassurance from professionals.**
Anxiety Population: correlational						
Rector et al (2011)	283 participants who met the criteria for an anxiety disorder. Social phobia (n=116); Generalised anxiety disorder (n=75); Panic disorder (n=50) and Obsessive-compulsive disorder (n=42). With 11% of the sample also having a concurrent diagnosis of depression.	Reassurance-seeking scale. (developed in this paper)	Beck depression inventory (BDI-II) (Beck et al 1996)	BAI (Beck and steer 1993) And depression and anxiety stress scale.	**63%**	*Outcome:* Scores for the three factors of the RSS were significantly positively correlated with the DASS, BAI and the BDI-II. RSS (decisions) and BAI r= .28; RSS (attachment) and BAI r= .22; RS (threat) and BAI = .42. RSS (decisions) and BDI =.45; RSS (attachment) and BDI= .40; RSS (threat) and BDI= .37 (all *p*<.001). *Interpretation:* **Increased reassurance-seeking is associated with increase anxiety and depression. More reassurance-seeking about general threat is associated with increased anxiety.**

The role of reassurance-seeking in depression and anxiety

Table 3 shows the outcomes of the 19 papers, of which some reported both comparison and correlational results. They are summarised here, in relation to the questions outlined in the Introduction.

Is a diagnosis of depression associated with reassurance-seeking? The studies detailed here show that individuals with a diagnosis of depression have greater levels of reassurance-seeking compared with: those suffering from anxiety disorders; those suffering from mental health disorders; and healthy controls and those who have recovered from depression (Joiner & Metalsky, 2001; Joiner et al, 2001; Kwon, Lee & Kwon, 2017; Luxton & Wanzlaff, 2005). However, one paper (Haciomeroglu & Inozu, 2019) does suggest that those with depression seek less reassurance than those with OCD.

Furthermore, those who have recovered from depression still engage in higher levels of reassurance-seeking than healthy controls (Bistricky, 2016). Those with a diagnosis of depression are more likely to seek reassurance about social threats, to seek it from health professionals, to trust that reassurance, and to check that they have understood the reassurance (Kobori et, al. 2015; Parrish & Radomsky, 2010). To summarise, a diagnosis of depression is related to reassurance-seeking in most of the literature.

Is a diagnosis of anxiety associated with reassurance-seeking? A diagnosis of anxiety was also linked to reassurance-seeking, compared to healthy controls (Kobori & Salkovskis, 2013). These populations were also more likely to have their anxiety raised further using reassurance-seeking (Salkovskis & Kobori, 2015), and were more likely to be depressed as a result (Kobori et al., 2015). To summarise, a diagnosis of anxiety was linked to reassurance-seeking.

Is depression dimensionally associated with reassurance-seeking?

While there were only a limited number of papers that considered whether depression is dimensionally associated with reassurance-seeking in clinical populations, most findings were consistent. Both Kwon et al. (2017) and Hudson et al. (2018) concluded that there is a positive association between the two. Moreover, the significant association between increased daily reassurance-seeking and increased daily depression suggests the link between depression and reassurance-seeking is state-based rather than trait-based (Starr, 2015). Additionally, in romantically involved couples, low mood was associated with increased reassurance-seeking (Knobloch et al., 2011). Rector et al. (2011) found positive and significant correlations between depression measures and the three factors of the RSS (general threat, decision making and social attachment).

However, there were some conflicting findings. In contrast to the papers detailed above, Stewart and Harkness (2016) found a non-significant correlation between depression and reassurance-seeking. However, the meaning of this finding is unclear, as this group were not initially recruited based on a diagnosis of depression and the task (BRST) that was undertaken by participants involved a different methodology to the other papers in the review. Furthermore, Benazon (2000) found that levels of depression and reassurance-seeking were not dimensionally associated in individuals with a depression diagnosis. This paper was unique in that it utilised both ‘in-episode’ and ‘out of-episode’ depression patients (e.g. those not currently meeting criteria for MDD but still in treatment). Explicitly examining this dichotomy did not alter the findings and depression was treated as a continuum. Lastly, Hill et al. (2015) found that reassurance-seeking did not predict persistent depression. Again, the methodology of this paper is different, in that it was the only paper to use the CES-D.

The small number of studies and their non-causal nature mean that any conclusions can only be preliminary. However, despite some paper's findings being contrary, it appears that there is a dimensional association between depressive symptomology and reassurance-seeking within those with clinical levels of depression.

Is anxiety dimensionally associated with reassurance-seeking? There was a similar dimensional association of anxiety and reassurance-seeking among individuals with anxiety-based disorders (Rector et al., 2011, 2019; Beesdo-baum et al., 2012). Furthermore, anxiety was particularly associated with reassurance-seeking related to general threat.

Does an intervention for reassurance-seeking impact on anxiety or depression? This review was unable to address this question, as there were no papers that tested this hypothesis directly. One paper found that CBT for anxiety reduced all aspects of reassurance-seeking, which predicted the change in anxiety scores (Rector et al., 2019).

Are there differences between reassurance-seeking in depression and anxiety? The findings suggest that the pattern of reassurance-seeking is different across populations with anxiety and depressive disorders. Depressed populations seek reassurance more than those with anxiety. The reassurance sought in depressed populations is more about decision making and social attachment/social threat and is more likely to be sought from professionals (Kobori et al., 2015; Parrish & Randomsky, 2010; Rector et al., 2011). In contrast, those with anxiety disorders are likely to become critical of those from whom they seek reassurance, and engage in repetitive, careful, and intense reassurance-seeking about general threats (Parrish & Randomsky, 2010; Kobori et al., 2015; Kobori & Salkovkis, 2015; Rector et al., 2011). Lastly, precipitating factors for

reassurance-seeking in both anxiety and depression include anxiety, sadness, and general threat, but depression is particularly associated with higher precipitating levels of sadness (Parrish & Radomsky, 2010; Salkovskis & Kobori, 2015).

Discussion

Findings of this review

The primary aim of this review was to understand the relationship between reassurance-seeking and a diagnosable level of depression or anxiety. The results show that for clinical populations or those with clinical levels of symptoms, both depression and anxiety are associated with higher levels of reassurance-seeking. In contrast, there is no evidence that addressed the secondary question, of whether targeting reassurance-seeking impacted on level of depression or anxiety. Finally, the review found several differences between reassurance-seeking in anxiety and depression. Those with depression are more likely to seek reassurance about social threats, with significant levels of sadness precipitating reassurance-seeking. In contrast, those with anxiety are more likely to seek reassurance about general threats.

Links to existing research

This systematic review builds on the existing literature that suggests that high levels of reassurance-seeking plays a part in the development and maintenance of depression and anxiety. A previous review by Joiner et al. (1999) examined the literature on excessive reassurance-seeking and depression and suggested that excessive reassurance-seeking provides an explanation of the consequences of depression (such as interpersonal problems). They proposed that interpersonal problems are only associated with depression when excessive

reassurance-seeking is present, linking reassurance-seeking to interpersonal rejection and contagious depression.

The literature since that time and included in this review has yielded mixed findings in relation to this proposal. For example, Knobloch et al. (2011) found an association between reassurance-seeking and partner depression, whereas Stewart and Harkness (2016) did not find such a link between depression and interpersonal problems. Therefore, while the literature to date supports a link between reassurance-seeking and depression, it does not conclusively demonstrate a role for interpersonal problems as a mechanism to explain the link.

Additionally, Joiner et al. (1999) suggested that in those with anxiety disorders, excessive reassurance could transform an anxious presentation into a depressed presentation. The comorbidity of anxiety and depression shown here (Rector et al., 2011) supports that idea, with their common association with reassurance-seeking. Therefore, it is possible that reassurance-seeking among those with an anxiety disorder could lead to symptoms of depression.

Several models of anxiety include reassurance-seeking as a core component (e.g., health anxiety - Salkovskis & Warwick, 1986). Moreover, excessive reassurance-seeking relating to general threats predicts future anxiety symptomology in non-clinical samples (Cougle et al., 2012). These existing findings are compatible with the finding of this review, indicating that those with anxiety disorders engage in reassurance-seeking about general threats.

Links to theory

Coyne's (1976) theory of depression suggests that those who are currently not depressed, but who are experiencing distress, seek reassurance as a form of assessing their self-worth and to check that others care about them. Other factors

might influence how the reassurance-seeking is maintained (e.g., the individual not believing the reassurance, or others not being able to provide reassurance all of the time). The repetitive nature of reassurance-seeking is then hypothesised to lead to higher levels of depression, and possible rejection from others. The findings of this review fit with the interpersonal nature of Coyne's theory of depression, as they show that increased reassurance-seeking was associated with increased depressive symptoms. Additionally, the findings suggest that the content of a depressed person's reassurance-seeking is likely to be about social threats. The findings also support the interpersonal nature of reassurance-seeking, showing those with depression seek reassurance from health professionals and check that they have understood the reassurance.

Finally, the findings of this review support the theory that reassurance-seeking acts as a safety behaviour. A safety behaviour is an action that an individual engages in to prevent them experiencing something difficult (e.g., distressing emotions). However, continuously engaging in safety behaviours and in the removal of negative stimuli prevents change (Gelder, 1997; Salkovskis, 1991; Skinner, 1971). This review showed that reassurance-seeking fits that pattern.

The dimensional association between reassurance-seeking and both anxiety and depression suggest that the more a person reassurance-seeks, the more symptoms of distress they experience. There were several specific findings in this review that merit consideration. The first is the finding that those with anxiety and depression experience anxiety, general threat, and sadness prior to the urge to reassurance-seek (Parrish & Radomsky 2010). This finding supports the hypothesis that engaging in reassurance-seeking is due to distressing emotions. Second, the results of Salkovskis and Kobori (2015) suggest that

where those with an anxiety disorder seek reassurance but do not get it, the result is increased anxiety.

These findings support the current theory of reassurance-seeking as a safety behaviour to manage or cope with anxiety or distress. Engaging in reassurance-seeking then leads to a short-term relief from distressing emotions when reassurance is given, but a long-term increase in distress when reassurance is not given.

Limitations

There are several limitations within this review that are worthy of note. First, the quality assessment tool used in this review may not have been the most appropriate. The Downs and Black quality assessment tool has been reviewed favourably in the past (Deeks et al., 2003), and has the benefit of allowing for comparison across multiple methodologies. However, for several papers, many of the items were removed from the overall total as they did not apply. Although this allowed for a comparable percentage to be calculated, it meant that many of the total scores were vastly different. This review might have benefited from developing and validating its own assessment tool, to allow for a more appropriate assessment of correlational and comparison methodologies.

Secondly, the second rater only rated four of the 19 papers (21%) included in the review. It might have been better for all papers to be double-rated in this way, to provide a more reliable and robust understanding of the quality of the papers found, and their implications for the conclusions reached in the review.

Separating out results related to those who had a clinical diagnosis and those who scored above clinical cut-offs might have allowed for further understanding of reassurance-seeking across these different populations.

Developing understanding about the differences and similarities between those formally diagnosed, those scoring above clinical cut-off and community samples would have addressed the possible ‘transient’ nature of depression and anxiety within these populations.

It is also important to note that many of the depression papers were based on university-based populations. The impact of this bias on the findings is unclear, but it should remembered that they are more likely to be younger, to be of a higher socio-economic status, and to have attained greater education. Future reviews should examine these factors in greater detail, exploring their potential impact on the literature base. It will also be important for research to recruit depression samples from clinical services rather than university populations.

The search terms were set to address anxiety and depression generally. However, broadening the search terms to specifically include other anxiety diagnoses might have allowed for more articles to be included (e.g., health anxiety).

This review did not include the “grey” literature, excluding dissertation papers that have not been published. This decision was made because unpublished papers are likely to be of a lower quality, as they have not been through the peer review process. However, it is possible that the findings of those unpublished studies could have added to the existing evidence base, or provided contrary results.

Lastly, this review set out to complete a meta-analysis. Due to the small number of papers and heterogeneity in the samples and measures used, a meta-analysis was not conducted. Future research should aim to conduct a meta-

analysis and subsequent funnel plots and Egger's test. These additional analyses would allow for identification of publication bias and gaps in the literature.

Clinical implications

This review reinforces the long-held clinical view that in clinical populations of depression and anxiety, reassurance-seeking is a contributing factor to symptomology. The findings of this review provide clinicians with a clear evidence base regarding how reassurance-seeking might present in those who they work with. That understanding allows for reassurance-seeking to be incorporated into clinical practice.

Current guidance for psychological interventions in both anxiety and depression suggests that a cognitive behavioural approach should be utilised (National Institute for Health and Care Excellence, 2011). Although CBT has a large evidence base, this does not mean that it is the most effective treatment for each individual with anxiety and depression. Where the individual uses a lot of reassurance-seeking, the literature suggests that reassurance-seeking needs to be considered for its interpersonal implications and the resultant strain onto relationships. It is possible that utilising other therapeutic models could address these interpersonal patterns of reassurance-seeking (e.g., interpersonal psychotherapy for depression; cognitive analytical therapy). Addressing these interpersonal patterns could allow for improved outcomes for clients. Within these relational models of therapy, there is more focus on patterns that individuals fall into. Open discussion about the possible consequences of reassurance-seeking could be helpful (e.g., "Others become fed up with my reassurance-seeking and reject me").

Labelling and understanding reassurance-seeking as problematic can be valuable during therapy. Utilising a vicious circle model (Williams, 2012) can help people visualise how their reassurance-seeking leads back into their symptomology. Talking about where the cycle can be broken allows individualised interventions to be planned. Beliefs about reassurance can be tested out via behavioural experiments, and changes made based on the outcome of such experiments. Both clinicians and clients can propose alternatives to reassurance-seeking that allow for the maintenance of relationships.

Much of the information included in this review might already be part of clinical practice. However, research has shown that many clinicians fail to implement evidence-based strategies such as behavioural experiments and exposure (Waller, Stringer, & Meyer, 2012). This review provides evidence that, in clinical populations of depression and anxiety, reassurance-seeking can be problematic and should be targeted with evidence-based interventions.

Future research

In this review, across anxiety and depression, there was no clear consensus on the best measures of reassurance-seeking. Several different measures of reassurance-seeking were used across different studies. Gaining a deeper understanding into how reassurance-seeking within anxiety and depression could allow for more precise, disorder-specific measures to be developed. Future research should examine these differences and look at what measure could be the most appropriate.

Some clarity has now been developed around how clinical levels of anxiety and depression are associated with reassurance-seeking. However, the literature

is still unclear as to the causality of those associations. Other factors might mediate this relationship (Davilla, 2000; Jacobson & Weary, 1999; Joiner, Alfano, & Metalsky, 1992; Katz & Beach, 1997). Further research is needed to understand both the correlation and causality between reassurance-seeking and depression and anxiety, using experimental designs and examining specific interventions targeted at reassurance-seeking.

Lastly, this review has shown that the precipitating factors to reassurance-seeking in anxiety and depression are different, as is the nature of the reassurance sought. The understanding that reassurance-seeking presents differently in anxiety and depression means that this phenomenon should be examined further within other diagnoses – particularly where they have an interpersonal element in their onset and maintenance. Therefore, it is important to examine reassurance-seeking in populations with other psychopathology, such as eating disorders or personality disorders.

Conclusions

This review set out to understand the relationship between reassurance-seeking and anxiety and depression. It has shown that reassurance-seeking is a strong element in both anxiety and depression. Further research is needed to explain the links in these relationships, and to determine the role of this safety behaviour in other disorders.

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Appendices

Appendix A: Prospero proposal for systematic literature review

Appendix B: Criteria and scoring of the quality assessment using the Down and Black assessment tool

Appendix A: Copy of Prospero proposal for systematic literature review

PROSPERO
International prospective register of systematic reviews

Systematic review

Please complete all mandatory fields below (marked with an asterisk *) and as many of the non-mandatory
fields as you can then click *Submit* to submit your registration. You don't need to complete everything in one
go, this record will appear in your *My PROSPERO* section of the web site and you can continue to edit it until
you are ready to submit. Click *Show help* below or click on the icon
to see guidance on completing each section.
This record cannot be edited because it has been rejected

1. * Review title.

Give the working title of the review, for example the one used for obtaining funding. Ideally the title should
state succinctly the interventions or exposures being reviewed and the associated health or social problems.
Where appropriate, the title should use the PI(E)COS structure to contain information on the Participants,
Intervention (or Exposure) and Comparison groups, the Outcomes to be measured and Study designs to be
included.

Understanding the links between reassurance seeking and depression and anxiety: A meta analysis

2. Original language title.

For reviews in languages other than English, this field should be used to enter the title in the language of the
review. This will be displayed together with the English language title.

Understanding the links between reassurance seeking and depression and anxiety: A meta analysis

3. * Anticipated or actual start date.

Give the date when the systematic review commenced, or is expected to commence.

04/11/2019

4. * Anticipated completion date.

Give the date by which the review is expected to be completed.

29/05/2020

5. * Stage of review at time of this submission.

Indicate the stage of progress of the review by ticking the relevant Started and Completed boxes. Additional
information may be added in the free text box provided.
Please note: Reviews that have progressed beyond the point of completing data extraction at the time of
initial registration are not eligible for inclusion in PROSPERO. Should evidence of incorrect status and/or
completion date being supplied at the time of submission come to light, the content of the PROSPERO
record will be removed leaving only the title and named contact details and a statement that inaccuracies in
the stage of the review date had been identified.
This field should be updated when any amendments are made to a published record and on completion and
publication of the review. If this field was pre-populated from the initial screening questions then you are not
able to edit it until the record is published.

The review has not yet started: No

PROSPERO

Review stage Started Completed

Preliminary searches Yes No
Piloting of the study selection process No No
Formal screening of search results against eligibility criteria No No
Data extraction No No
Risk of bias (quality) assessment No No
Data analysis No No
Provide any other relevant information about the stage of the review here (e.g. Funded proposal, protocol not
yet finalised).

6. * Named contact.

The named contact acts as the guarantor for the accuracy of the information presented in the register record.

Amelia Woodhouse

Email salutation (e.g. "Dr Smith" or "Joanne") for correspondence:

Miss Woodhouse

7. * Named contact email.

Give the electronic mail address of the named contact.

awoodhouse2@sheffield.ac.uk

8. Named contact address

Give the full postal address for the named contact.

University of Sheffield \nClinical Psychology unit \nCathedral Court\n1 Vicar Lane\nSheffield\ns1 2LT\n

9. Named contact phone number.

Give the telephone number for the named contact, including international dialling code.

07851925026

10. * Organisational affiliation of the review.

Full title of the organisational affiliations for this review and website address if available. This field may be
completed as 'None' if the review is not affiliated to any organisation.

University of Sheffield

Organisation web address:

11. * Review team members and their organisational affiliations.

Give the title, first name, last name and the organisational affiliations of each member of the review team.
Affiliation refers to groups or organisations to which review team members belong.

Miss Amelia Woodhouse. University of Sheffield

Give summary criteria for the participants or populations being studied by the review. The preferred format
includes details of both inclusion and exclusion criteria.

Population being explored will be adults 18-65 who have recieved a diagnosis of anxiety or depression as
described by clinical levels of anxiety and depression in the original paper.

Depression Inclusion criteria

• Assessment of unipolar depression (either through self-reported measures, interview rated scales,
structured or semi-structures interviews or diagnosis acquired through chart review)
• Provide a correlational co-efficient between RS and depression (Pearson's R) or pre/post measures
(cohen's D) or enough information for this computation of effect size
• Assessment of reassurance seeking
• Published in a peer reviewed journal

Exclusion

• Articles in which "negative affect" or "low mood" rather than depression will be excluded
• Unpublished data and book chapters

Anxiety Inclusion criteria

• Assessment of any anxiety disorder (either through self-reported measures, interview rated scales,
structured or semi-structures interviews or diagnosis acquired through chart review)
• Provide a correlational co-efficient between RS and anxiety (peason's R) or Pre/post measures (cohen's
D) or enough information for this computation of effect size.
• Assessment of Reassurance seeking
• Must have been published in a peer reviewed journal
Exclusion
• Health related anxiety?
• OCD?
• Unpublished data and book chapters

20. * Intervention(s), exposure(s).

Give full and clear descriptions or definitions of the nature of the interventions or the exposures to be
reviewed.

Any intervention focusing on reassurance seeking for the treatment of anxiety or depression.

21. * Comparator(s)/control.

Where relevant, give details of the alternatives against which the main subject/topic of the review will be
compared (e.g. another intervention or a non-exposed control group). The preferred format includes details
of both inclusion and exclusion criteria.

Control comparisons would include treatment as usual or waitlist control. This will be dependant on the
studies included in the reveiw and will not be directly reported on within the meta analysis.

22. * Types of study to be included.

Give details of the types of study (study designs) eligible for inclusion in the review. If there are no
restrictions on the types of study design eligible for inclusion, or certain study types are excluded, this should
be stated. The preferred format includes details of both inclusion and exclusion criteria.

Depression Inclusion criteria
• Assessment of unipolar depression (either through self-reported measures, interview rated scales,
structured or semi-structures interviews or diagnosis acquired through chart review)
• Provide a correlational co-efficient between RS and depression (Pearson's R) or pre/post measures
(cohen's D) or enough information for this computation of effect size
• Assessment of reassurance seeking
• Published in a peer reviewed journal
•Papers including a population aged 18-65
Anxiety Inclusion criteria
• Assessment of any anxiety disorder (either through self-reported measures, interview rated scales,
structured or semi-structures interviews or diagnosis acquired through chart review)
• Provide a correlational co-efficient between RS and anxiety (peason's R) or Pre/post measures (cohen's
D) or enough information for this computation of effect size.
• Assessment of Reassurance seeking
• Must have been published in a peer reviewed journal
•Papers including a pupulation aged 18-65

23. Context.

Give summary details of the setting and other relevant characteristics which help define the inclusion or
exclusion criteria.

Exclusion:
Studies which do not include populations aged 18-65

Studies in which a measure of anxiety or depression is not used or reported on
Studies which have poor quality assessment.
Unpublished studies or book chapters.

24. * Main outcome(s).

Give the pre-specified main (most important) outcomes of the review, including details of how the outcome is
defined and measured and when these measurement are made, if these are part of the review inclusion

criteria.
Main outcomes of the reveiw will be the effect size of the included papers alongside quality assessment of
the papers.
For correlational studies pearson's R will be used for effect size. If intervention studies are indentified for
includion cohens D will be used (with outcome measures of anxiety and depression as the main outcome for
studies). These effect sizes will then be converted into a common metric for comparison. A meta analysis will
then be conducted.

Timing and effect measures

25. * Additional outcome(s).

List the pre-specified additional outcomes of the review, with a similar level of detail to that required for main
outcomes. Where there are no additional outcomes please state ‘None’ or ‘Not applicable’ as appropriate
to the review

Not applicable

Timing and effect measures

26. * Data extraction (selection and coding).

Describe how studies will be selected for inclusion. State what data will be extracted or obtained. State how
this will be done and recorded.

Papers will be quality assessed prior to inclusion. Those with low quality assessment will then be excluded
from the review.
effect sizes (pearson's R or cohens D) will be extracted from the papers as data and will be used to conduct
a meta analysis.

27. * Risk of bias (quality) assessment.

Describe the method of assessing risk of bias or quality assessment. State which characteristics of the
studies will be assessed and any formal risk of bias tools that will be used.

subjectiveFormal quality assessment tools will be used to attempt to negate the risk of bias during the quality
assessment phase. The reviewer understand the impact of bias during the quality assessment phase even
when using formal quality assessment tools due to the supjective nature of quality assessment. Where possible, two reviewers will be used to conduct the quality assessment and will discuss any
disagreement between them

28. * Strategy for data synthesis.

Provide details of the planned synthesis including a rationale for the methods selected. This **must not be**
generic text but should be **specific to your review** and describe how the proposed analysis will be applied
to your data.

Ameta analysis will be used to synethsise the data. Effect sizes will be exctrated from the data(one effect

size per study) and will then be integrated (using a common metric). Heterogeniety of the studies will then be

investigated; Q test and I squared statistics will allow for a true test of heterogeneity. A sub group analysis
will then be undertaken to test hypothesis about the relationship between a grouping variable and effect
sizes (e.g. the impact of age, type of measures used, intervention etc). Funnel plots and the Egger's test will
be used to examine if there is a publication bias impacting on the results of the analysis.

29. * Analysis of subgroups or subsets.

State any planned investigation of 'subgroups'. Be clear and specific about which type of study or
participant will be included in each group or covariate investigated. State the planned analytic approach.

See above.

30. * Type and method of review.

Select the type of review and the review method from the lists below. Select the health area(s) of interest for
your review.

Type of review

Cost effectiveness
No
Diagnostic
No
Epidemiologic
No
Individual patient data (IPD) meta-analysis
No
Intervention
No
Meta-analysis
Yes
Methodology
No
Narrative synthesis
No
Network meta-analysis
No
Pre-clinical
No
Prevention
No
Prognostic
No
Prospective meta-analysis (PMA)
No
Review of reviews
No
Service delivery
No
Synthesis of qualitative studies
No
Systematic review

Yes
Other

No

Health area of the review

Alcohol/substance misuse/abuse
No
Blood and immune system
No
Cancer
No
Cardiovascular
No
Care of the elderly
No
Child health
No
Complementary therapies
No
Crime and justice
No
Dental
No
Digestive system
No
Ear, nose and throat
No
Education
No
Endocrine and metabolic disorders
No
Eye disorders
No
General interest
No
Genetics
No
Health inequalities/health equity
No
Infections and infestations
No
International development
No
Mental health and behavioural conditions
Yes
Musculoskeletal
No
Neurological
No
Nursing

No
Obstetrics and gynaecology
No
Oral health
No
Palliative care
No
Perioperative care
No
Physiotherapy
No
Pregnancy and childbirth

No
Public health (including social determinants of health)
No
Rehabilitation
No
Respiratory disorders
No
Service delivery
No
Skin disorders
No
Social care
No
Surgery
No
Tropical Medicine
No
Urological
No
Wounds, injuries and accidents
No
Violence and abuse
No

31. Language.

Select each language individually to add it to the list below, use the bin icon to remove any added in error.

English
There is not an English language summary

32. * Country.

Select the country in which the review is being carried out from the drop down list. For multi-national
collaborations select all the countries involved.

England

33. Other registration details.

Give the name of any organisation where the systematic review title or protocol is registered (such as with

The Campbell Collaboration, or The Joanna Briggs Institute) together with any unique identification number
assigned. (N.B. Registration details for Cochrane protocols will be automatically entered). If extracted data
will be stored and made available through a repository such as the Systematic Review Data Repository
(SRDR), details and a link should be included here. If none, leave blank.

34. Reference and/or URL for published protocol.

Give the citation and link for the published protocol, if there is one
Give the link to the published protocol.
Alternatively, upload your published protocol to CRD in pdf format. Please note that by doing so you are
consenting to the file being made publicly accessible.

No I do not make this file publicly available until the review is complete

Please note that the information required in the PROSPERO registration form must be completed in full even
if access to a protocol is given.

35. Dissemination plans.

Give brief details of plans for communicating essential messages from the review to the appropriate
audiences.

Results will be disseminated via conferences and peer reviewed journals.

Do you intend to publish the review on completion?

Yes

36. Keywords.

Give words or phrases that best describe the review. Separate keywords with a semicolon or new line.
Keywords will help users find the review in the Register (the words do not appear in the public record but are
included in searches). Be as specific and precise as possible. Avoid acronyms and abbreviations unless
these are in wide use.

Reassurance; seeking; anxiety; depression

37. Details of any existing review of the same topic by the same authors.

Give details of earlier versions of the systematic review if an update of an existing review is being registered,
including full bibliographic reference if possible.

38. * Current review status.

Review status should be updated when the review is completed and when it is published. For newregistrations the review must be Ongoing.
Please provide anticipated publication date

Review_Ongoing

39. Any additional information.

Provide any other information the review team feel is relevant to the registration of the review.

40. Details of final report/publication(s).

This field should be left empty until details of the completed review are available.
Give the link to the published review.

Appendix B: Criteria and scoring of the quality assessment using the Downs and Black assessment tool

Reporting	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**
1. Is the hypothesis/aim/objective of the study clearly described?	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2. Are the main outcomes to be measured clearly described in the Introduction or Methods section?	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3. Are the characteristics of the patients included in the study clearly described?	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4. Are the interventions of interest clearly described?	1	N/A	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	N/A	N/A	N/A
5. Are the distributions of principal confounders in each group of subjects to be compared clearly described?	1	1	1	1	1	0	0	0	1	1	0	1	0	1	1	1	1	0	1
6. Are the main findings of the study clearly described?	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7. Does the study provide estimates of the random	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

variability in the data for the main outcomes?																			
8. Have all important adverse events that may be a consequence of the intervention been reported?	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	N/A	N/A	0
9. Have the characteristics of patients lost to follow-up been described?	1	N/A	N/A	0	1	0	N/A	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	N/A	N/A	N/A
10. Have actual probability values been reported?	1	0	1	0	1	1	0	0	0	0	1	0	0	0	0	0	1	1	0
External validity																			
11. Were the subjects asked to participate in the study representative of the entire population from which they were recruited?	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1
12. Were those subjects who were prepared to participate representative of the entire population from which they were recruited?	0	0	0	1	1	0	0	1	0	0	0	0	1	1	0	1	1	1	1

13. Were the staff, places, and facilities where the patients were treated, representative of the treatment the majority of patients receive?	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	N/A	N/A	N/A
Internal validity- bias																			
14. Was an attempt made to blind study subjects to the intervention they have received ?	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	N/A	N/A	N/A
15. Was an attempt made to blind those measuring the main outcomes of the intervention?	0	N/A	N/A	N/A	N/A	N/A	N/A	N/Aa	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	N/A	N/A	N/A
16. If any of the results of the study were based on “data dredging”, was this made clear?	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
17. In trials and cohort studies, do the analyses adjust for different lengths of follow-up of patients, or in case-control studies, is the time period between the intervention and	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	UN	N/A	N/A	N/A

outcome the same for cases and controls?																			
8. Were the statistical tests used to assess the main outcomes appropriate?	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
19. Was compliance with the intervention/s reliable?	1	N/A	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	N/A	N/A	N/A
20. Were the main outcome measures used accurate (valid and reliable)?	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Internal validity - confounding (selection bias)																			
21. Were the patients in different intervention groups (trials and cohort studies) or were the cases and controls (case-control studies) recruited from the same population?	1	1	1	1	1	N/A	N/A	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	N/A	N/A	N/A
22. Were study subjects in different intervention groups (trials and cohort studies) or were the cases and controls (case-control studies) recruited over the same period of time?	1	N/A	1	0	0	N/A	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	UN	N/A	N/A	N/A

23. Were study subjects randomised to intervention groups?	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	N/A	N/A	N/A
24. Was the randomised intervention assignment concealed from both patients and health care staff until recruitment was complete and irrevocable?	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	N/A	N/A	N/A
25. Was there adequate adjustment for confounding in the analyses from which the main findings were drawn?	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
26. Were losses of patients to follow-up taken into account?	UN	N/A	N/A	0	1	N/A	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	N/A	N/A	N/A
Power																			
27. Did the study provide any information on power? *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Score	**20 /27**	**12 /14**	**16 /19**	**12/18**	**15/18**	**10 /16**	**8 /14**	**12/18**	**10/ 14**	**10 /14**	**10 /14**	**10 /14**	**10 /14**	**11 /14**	**10 /14**	**16 /27**	**12 /14**	**13 /14**	**12 /14**
Percentage	**74%**	**86%**	**84%**	**66.6%**	**83.3%**	**63%**	**57%**	**66.6%**	**63%**	**63%**	**63%**	**63%**	**63%**	**79%**	**63%**	**59%**	**86%**	**93%**	**83%**

**Note: for the purpose of this study this item was changed from "Did the study have sufficient power to detect a clinically important effect where the probability value for a difference being due to chance is less than 5%?" as some researchers have questioned the usefulness of this item.*

N/A= not applicable, UN= unknown

Key:

1. Beesdo-baum, K., Jenjahn, E., Hofler, M., Leuken, U., Becker, E. S., & Hoyer, J. (2012)
2. Benazon, N. R. (2000)
3. Bistricky, S. L., Harrison, J., Tran, K., & Schield, S. (2016)
4. Haciomeroglu, B., & Inozu, M. (2019)
5. Hill, R. M., Yaroslavsky, I., & Pettit, J. W. (2015)
6. Hudson, C. C., Shamblaw, A. L. Wilson, G. A., Roes, M. M., Sabbagh, M. A., & Harkenss, K. L. (2018)
7. Joiner, T. E., & Metalsky, G. I. (2001)
8. Joiner, T. E., Metalsky, G. I., Gencoz, F., & Gencoz, T. (2001)
9. Knobloch, L. K., Knobloch-Fedders, L. M., & Durbin, E. (2011)
10. Kobori, O., & Salkovskis, P. M. (2013)
11. Kobori. O., Sawamiya, Y., Iyo, M., & Shimizu, E. (2015)
12. Kwon, H., Lee, J-S., & Kwon, J-H. (2017)
13. Luxton, D., & Wenzlaff, R. (2005)
14. Parrish, C. L., & Radomsky, A. S. (2010)
15. Rector, N. A., Kamkar, K., Cassin, S. E., Ayearst, L. E., & Laposa, J. M. (2011)
16. Rector, N. A., Katz, D. E., Quilty, L. C., Laposa, J. M., & Collimore, K. (2019)
17. Salkovskis, P. M., & Kobori, O. (2015)
18. Starr, L. R. (2015)
19. Stewart, J. G., & Harkness, K. L. (2016)

Section 2: Research Project

The development and validation of a reassurance-seeking measure specific to eating disorders: The RSED-Q

Abstract

Objectives: Anxiety, depression and eating disorders are highly comorbid. A common mechanism underlying this comorbidity is the use of safety behaviours. Safety behaviours are performed to relieve distress in the short term but have negative long-term outcomes. A common safety behaviour evident in anxiety and depression is reassurance-seeking, but this behaviour has received little attention in eating disorders. The small amount of existing research suggests associations between reassurance-seeking, eating pathology and interpersonal difficulties. Currently, no validated measure exists that can identify and quantify eating disorder specific reassurance-seeking. This research aimed to develop and validate a reassurance-seeking measure specific to eating disorders.

Method: This non-clinical study utilised a cross-sectional design, with a longitudinal element (test-retest reliability). 167 participants completed the RSE-Q alongside measures of anxiety, depression, eating pathology, social anxiety and general reassurance-seeking. 63 participants also completed the RESED-Q a second time to allow for test-retest reliability. Factor analysis was conducted on the results of the RSED-Q. Correlations (Pearson's *r*) and paired t-tests were used to determine test-retest reliability. Correlation coefficients were also used to test the concurrent validity of the RSED-Q with the generic measure of reassurance-seeking. Finally, regression analysis allowed for clinical validation of the RSED-Q.

Results: Six factors emerged following factor analysis of the RSED-Q. The final version of the RSED-Q was shortened from 36 to 25 items. Test-retest reliability showed that the factors of RSED-Q were reliable and stable over time. Concurrent validity showed moderate reliability between the RSED-Q and a

measure of generic reassurance-seeking. Clinical validation of the measure suggested that the RSED-Q was a better predictor of eating pathology than the generic measure of reassurance-seeking, but the opposite was found for social anxiety. Lastly, those who had experienced negative reactions to their reassurance-seeking exhibited higher levels of eating pathology, depression, and social anxiety.

Conclusions: These findings suggest that reassurance-seeking related to eating pathology within a non-clinical sample. Additionally, an eating disorder specific measure of reassurance is better at predicting eating pathology than a generic measure. Limitation and clinical implication are discussed, and it is recommended that future research replicate this study in clinical populations.

Key words: reassurance-seeking, eating disorders, eating pathology, measure, questionnaire

Practitioner Points:

- Information about reassurance-seeking and eating pathology should be provided via psychoeducation and prevention approaches.
- Findings suggest it could be useful to include of reassurance seeking across all phases of therapy, including assessment, formulation, and intervention.
- Clinicians should also be aware of and respond to reassurance-seeking in sessions.

- Intervention such as behavioural experiments can be used to promote change.
- If the RSED-Q is validated in clinical populations, it should be incorporated into routine clinical practice.

Introduction

Eating disorders such as anorexia nervosa, bulimia nervosa and binge-eating disorder involve significant maladaptive behaviours related to disturbances in body image and eating patterns (Vocks, Legenbauer, Rüddel, & Troje, 2007). Additionally, eating disorders are frequently associated with poor quality of life, social isolation and carer burden (National Institute of Health and Care Excellence [NICE], 2017). Finally, they have the highest mortality rates of any psychiatric disorder (Arcelus, Mitchell, Wales & Nielsen, 2011). According to the National Health Service (NHS), up to 6.4% of all adults exhibit symptoms of an eating disorder (Bebbington et al., 2007). In females aged 15-29 years, prevalence rates of full eating disorders can range from 3% to 10% (Hoek & van Hoeken, 2003).

Recent guidance for treating eating disorders recommends cognitive behavioural therapy for eating disorders (CBT-ED) (NICE 2017), which focuses on the maintaining aspects of eating disorders. However, research suggests that recovery rates for eating disorders are not adequate. For example, in a sample of individuals diagnosed with anorexia nervosa, only 46% made a full recovery, 33% improved without making a full recovery, and 20% remained chronically ill (Steinhausen, 2002). In contrast, recovery from bulimia nervosa and binge-eating disorder is substantially higher, but only with treatment. These limited recovery rates mean that it is important to enhance our understanding of the maintenance factors for eating disorders. That understanding allows clinicians to target them specifically during treatment, and potentially to improve treatment outcomes for individuals.

Eating disorders are highly comorbid with anxiety, which is linked to all types of eating pathology (Pallister & Waller, 2008). The mechanism underlying the comorbidity of anxiety and eating disorders is thought to be safety behaviours. Safety behaviours allow the individual to regulate their negative emotions in the short term. In the longer term, however, safety behaviours can maintain psychopathology through sustaining negative beliefs about the self (Salkovskis,1999). Safety behaviours in eating disorders (e.g., body checking, restriction, vomiting) direct an individual's attention towards their shape, weight and size, and ensure that counter-evidence to their beliefs is not discovered.

Safety behaviours are found across all eating disorders - anorexia nervosa, bulimia nervosa, binge-eating disorder, and atypical cases (Neumark-Sztainer, Paxton, Hannan, Haines, & Story, 2006). They include avoidant, checking and social behaviours (Waller & Kyriacou Marcoulides, 2013), and can focus on control, weight, and shape (Fairburn & Harrison, 2003). Safety behaviours within eating disorders have been widely researched, influencing both the understanding and treatment of eating disorders. However, one safety behaviour that is well known in other disorders has received little acknowledgement within the eating disorder literature – reassurance-seeking.

Reassurance-seeking is the act of seeking approval and reassurance relating to one's worth from other people (Mason et al., 2016; Joiner & Metalsky, 2001). Reassurance-seeking is interpersonal and can become problematic when it is the predominant way in which personal validation is sought. Reassurance-seeking is common in many anxiety disorders, such as obsessive-compulsive disorder (OCD) and health anxiety (Abramowitz & Moore, 2007; Kobori & Salkovskis, 2013; Salkovskis & Warwick, 1986; Salkovskis et al., 2003). It is also commonly identified in depression (Coyne, 1976).

However, despite extensive research into reassurance-seeking in both anxiety and depression, there is little literature examining the role of reassurance-seeking in eating disorders. However, recent studies have suggested a link. For example, reassurance-seeking has been proposed as an underlying mechanism between bulimic symptoms and interpersonal distress (Kwan, Minnich, Douglas, Gordon & Castro, 2017). Both Mason et al. (2016) and Selby et al. (2008) report positive correlations between reassurance-seeking and eating disorder symptomology. Additionally, Reas and Grilo (2004) suggest an association between higher levels of reassurance-seeking and greater body dissatisfaction. Finally, Cooley, Toray, Valdez and Tee (2007) reported reassurance-seeking as a risk factor for increased eating pathology and the development of eating problems in undergraduate woman. These studies show an association between high levels of reassurance-seeking, eating disorder symptomology and interpersonal conflict. However, it is noteworthy that the levels of association between reassurance-seeking and eating pathology are lower than the associations between reassurance-seeking and anxiety or depression.

These findings suggest a causal role of reassurance-seeking in eating pathology, which is likely to be based on a maintaining relationship. If that is the case, then it is possible that targeting reassurance-seeking in psychological interventions might enhance treatment outcomes in eating disorders. However, reassurance-seeking behaviours in eating disorders (e.g., seeking reassurance about one's weight) are different in nature to those in other disorders (e.g., asking if one has locked a door), and the existing measures are designed with anxiety and depression in mind. Therefore, clinicians' ability to identify reassurance-seeking in eating disorders is limited by the lack of a validated measure for this population. It is possible that this lack of specificity to eating disorders could

explain why the associations are weaker in eating disorders (see above), rather than assuming that reassurance-seeking is less important in eating pathology than in anxiety or depression.

To illustrate this point, measures such as the Depressive and Obsessive Reassurance Seeking Scale (DORSS; Radomsky, Parrish & Dugas, 2009) are less likely to be related to eating pathology because they were not developed with eating disorders in mind. The DORSS was developed based on theories of depression and OCD, so items within this questionnaire relate to those disorders. However, those other measures could still help in understanding reassurance-seeking in eating disorders, because they address the structure of reassurance-seeking. For example, the DORSS separates reassurance-seeking into overt/active and covert/passive elements. Therefore, any measure that is specific to reassurance-seeking in eating disorders should consider similar constructs.

No measure currently exists that is specific to reassurance-seeking in eating disorders. Such a measure is needed to determine whether reassurance-seeking is a key safety behaviour in eating pathology. If such a maintaining role is found to be important in eating disorders, it could be relevant to assessing, formulating, and treating eating disorders, potentially enhancing the impact of such treatments. Therefore, this research will develop and validate a reassurance-seeking measure that is specific to eating disorders, in order to determine its psychometric properties, its potential clinical utility, and its value in future research.

Aim

To develop a self-report measure of reassurance-seeking that is more relevant to eating pathology than existing generic measures of reassurance-

seeking. To demonstrate the utility of that measure, the following hypotheses will be addressed.

Hypotheses

1. The measure will have a clear factor structure, with adequate internal consistency.
2. The measure will show strong stability over time (test-retest reliability).
3. The measure will correlate moderately with generic measures of reassurance-seeking.
4. The measure will be more strongly associated with eating pathology than a generic measure of reassurance-seeking.
5. The measure will be associated with measures of anxiety and mood to a degree that is comparable to generic measures of reassurance-seeking.

Method

Ethics

Ethical approval was granted by the University of Sheffield Research Ethics Committee (Appendix A), with approval also obtained for necessary amendments to enhance recruitment. All participants gave informed consent following reading the information sheet and consent form (Appendices B and C). If participants indicated that they met some exclusion criteria (e.g., eating disorders), they were directed to the University Health services. Following the study, the debrief (Appendix D) directed them to additional support following completion of the study, if needed.

Following completion of the study, participants were asked to consider participating in a two-week follow-up to assess test-retest reliability. If they agreed, they were asked to provide their email address to allow their data to be

linked over time. Once the two data sets were linked, their email address and IP address were permanently deleted from all files.

Design

The study utilised a cross-sectional design, with a longitudinal element (test-retest reliability). Psychometric analysis was undertaken on the new measure using a community sample, in order to validate the new measure psychometrically.

Participants

Participants were adults, recruited through the University of Sheffield's announcement system (for both staff and students), as well as through contacting other Clinical Psychology training courses across the United Kingdom (adverts are in Appendix E).

Inclusion and exclusion criteria

The inclusion criteria were any adult male or female, aged over 18 years. As the aim was to recruit a non-clinical group, those currently in treatment for a mental health difficulty and those with a diagnosis of a learning disability were excluded from participation. Scores on measures were not used to screen participants in or out of the study.

This study was part of a longer-term strategic plan with the Centre for Clinical Interventions (CCI) in Perth, who collaborated on this project. The aim of this research was to examine links between eating pathology and reassurance-seeking in a non-clinical population, and to establish the method as being non-risk. The population was limited to those with no current/historical eating disorders and no current mental health treatment. The Perth team will

subsequently conduct research on a university population (not excluding those with clinical pathology) and on a clinical population of those with eating disorders.

Numbers recruited

The initial target was 300 participants, to give close to a 10:1 ratio of participants to items for the factor analysis (Costello & Osborne, 2005). That number was not achieved, with only 167 completing the RSED-Q and 148 completing all the measures. However, there has been disagreement amongst researchers as to the number of participants or the participant:factor ratio needed to produce a robust factor analysis. While this study did not achieve the 10:1 ratio, it met other guidelines for absolute numbers needed (e.g., at least 100 - Gorsuch, 1983) and for the ratio needed (Cattell, 1978; Gorsuch, 1983). Therefore, the sample of 167 was deemed acceptable for current purposes, though it also means that replication should be undertaken to confirm the robustness of the factor structure.

Measures

All participants were asked to complete the following measures of reassurance-seeking, eating pathology, anxiety, depression, and social anxiety, to address the hypotheses. (All measures can be found in Appendix F-J, except the Reassurance Seeking Scale which has been removed to comply with copyright)

Reassurance-Seeking in Eating Disorders Questionnaire (RSED-Q)

This measure was developed for this study. It initially consisted of 36 items. The RSED-Q uses a similar structure to the Depressive and Obsessive Reassurance Seeking Scale (DORSS; Radomsky, Parrish & Dugas, 2009)

including items that address both active/direct and passive/indirect reassurance-seeking. Participants were asked to rate their agreement with each item on a five-point Likert scale (ranging from “Never” to “All the time”. For a full description of the development of the RSED-Q, please see the “Procedure” section.

Generalised Anxiety Disorder – 7 (GAD-7; Spitzer, Kroenke, Williams, & Löwe, 2006)

The GAD-7 is a 7-item self-report measure of anxiety, with strong psychometric properties. Internal consistency is high (α = 0.92) as is test-retest reliability (r= 0.83) (Spitzer et al., 2006). Respondents are asked how frequently over the last two weeks they have experienced specific symptoms of anxiety, including “trouble relaxing” or “Feeling afraid as if something awful might happen”. Responses are rated on a 4-point Likert scale (0= not at all, 3=Nearly every day). A score of 0-4 suggests no anxiety, 5-9 represents mild anxiety, 10-14 represents moderate anxiety, and 15-21 indicates severe anxiety (Lowe, Decker, Muller, Braher, Schellberg, Herzog, & Herzberg, 2008).

Patient Health Questionnaire – 9 (PHQ-9; Kroenke, Spitzer, & Williams, 2001)

The PHQ-9 is a nine-item self-report measure of depression. Respondents are asked how frequently over the last two weeks they have experienced a number of different symptoms of depression (e.g., “Poor appetite or overeating” or “Feeling bad about yourself-or that you are a failure or have let yourself or your family down”). The PHQ-9 has been shown to be both sensitive and specific (both 88%) when identifying major depression and has excellent internal consistency α = 0.89 (Kroenke et al., 2001). A score of 0-4 indicates no depression, 5-9 suggests mild depression, 10-14 represents moderate depression, 15-19

indicates moderately severe depression, and a score of 20-27 suggests severe depression (Kroenke, Spitzer, & Williams, 2001).

Eating Disorder Examination Questionnaire (EDE-Q; Fairburn & Beglin, 2008)

The EDE-Q is a 28-item self-report questionnaire, developed from the Eating Disorder Examination diagnostic interview (Fairburn & Cooper 1993). It assesses eating attitudes and behaviours. Respondents are asked how frequently over the last 28 days they have engaged in specific behaviours or cognitions (e.g., “Have you gone for long periods of times (8 waking hours or more) without eating anything at all in order to influence your shape or weight”, or “Over the past 28 days, how many times have you eaten what other people would regard as an unusually large amount of food (given the circumstances)?”). The EDE-Q has four attitudinal subscales (restraint, weight concern, shape concern, and eating concern), as well as providing an overall global score. The EDE-Q has strong psychometric properties, including factor structure, test-retest reliability, and clinical validity (e.g., Berg, Peterson, Frazier & Crow, 2012). For this study, the four attitudinal subscales and global total were calculated. The behavioural items were not used.

There has been conflicting opinion about what the clinical cut-off for the EDE-Q global score should be, ranging from 1.7 to 4 (Meule, 2019). Fairburn & Beglin (1994) utilised a community sample and found that community norms for the global and subscales were: Global = 1.404 (SD = 1.130); Restraint subscale 1.251 (SD = 1.323); Eating Concern subscale = 0.624 (SD = 0.859); Shape Concern subscale = 2.149 (SD = 1.602); and Weight Concern subscale 1.587

(SD =1.369). They suggested a clinical cut-off of EDE-Q Global > 2.77. Results will be compared to these community norms.

Brief Fear of Negative Evaluation Scale (BFNE; Leary, 1983)

The BFNE is a 12-item self-report measure of social anxiety, with strong psychometric properties. Internal consistency is high (α = 0.90) (Leary, 1983). Respondents are asked to rate how much a statement is characteristic of them (e.g. “I am frequently afraid of other people noticing my shortcomings”). Responses are rated on a 5-point Likert scale (0 = Not at all, 4 = Extremely). This short version of the FNE correlates very strongly with the full-length version (r = .96). Therefore, the short version of this questionnaire will be used, as it takes less time to complete. The version of the BFNE used in this research has been shown to have a normative mean of 35.7 (Leary 1983).

Reassurance Seeking Scale (RSS; Rector, Kamkar, Cassin, Ayearst, & Laposa, 2011).

The RSS is a 30-item self-report scale, measuring general reassurance-seeking. Respondents are asked to report the frequency with which they have engaged in reassurance-seeking in a range of different situations (e.g. “Prior to making a decision”). This is done on a five-point Likert scale (1= “Not at all”, 5= “Extremely”). The RSS has three subscales - decision making, social attachment, and general threat. The RSS has good internal consistency and is moderately correlated with measures of anxiety and depression (Rector et al., 2011). Rector et al. (2011) suggests the following normative mean scores for the subscales: decision making = 42.54; social attachment = 24.13; and general threat= 27.53.

Procedure

The development of the RSED-Q was iterative over several versions. Items reflected the ways in which individuals with eating and body image pathology seek reassurance. They were initially generated based on previous literature and clinical experience by AW and GW. The resulting 25 items were then reviewed by clinical research colleagues working in Australia (BR, PM & LL), who modified and added items for further review by the UK team. As part of this iterative process, six draft versions of the measure were produced prior to the 36-item version of the questionnaire used in this research. The research teams agreed that the measure had face validity.

Although patient participant involvement (PPI) was not used during the development of the RSED-Q, feedback from an expert clinician base (the CCI team) was utilised, as clinicians will be the main users of the measure. When the final version of the RSED is produced, following additional research with the CCI, it will be distributed to groups who experience disordered eating, for their feedback.

Participants responded to the RSED-Q on a five-point Likert scale. They were also asked to consider completing the measure again two weeks later, to determine test-retest reliability.

All measures were presented via an online survey, using the Qualtrics platform. A link was provided to potential participants via an email invite. Data were stored securely prior to being downloaded for analysis. Two weeks later, a second link was sent to those who indicated their interest in completing the RSED-Q for the retest phase. This second survey contained only the RSED-Q.

In order to maintain confidentiality, once participants' responses were complete, all identifying information was deleted from the data set.

Data Analysis

All analyses were conducted using SPSS v.26. Hypothesis 1 was tested using exploratory factor analysis (Principal Factor Analysis method), as the measure is new. As well as the initial orthogonal solution, a Direct Oblimin rotation was used, as such measures often yield scales that are correlated (making this rotation most appropriate). Cronbach's *alpha* was used to determine the internal consistency of the resulting scales, and correlations (Pearson's *r*) and total-item correlations where used to examine individual items for inclusion or deletion. Response rates were not used to analyse data at any stage of analysis. Independent sample t-tests were used to determine association of the resulting scales with age, BMI and gender.

Test-retest reliability (Hypothesis 2) was tested using two analyses. First, correlations (Pearson's *r*) were used to determine the association of the scores at the two time points. Second, paired t-tests were used to determine whether the mean score on each scale was stable over time.

Correlation coefficients (Pearson's *r*) were also used to test the concurrent validity of the RSED-Q (Hypothesis 3). All the RSED-Q scales were tested for their association with all the RSS scales.

The clinical validity of the RSED-Q was tested (Hypotheses 4 and 5) using multiple regression analyses. In each case, the RSED-Q and RSS scales were entered simultaneously as independent variables to predict scores on the individual independent variables (EDE-Q Global score, GAD-7, PHQ-9 and BFNE).

Results

Descriptive statistics

Table 1 shows the mean and standard deviation of age, Body Mass Index (BMI and each scale. It also includes the Cronbach's alpha for each scale, from the current data.

Compared to normative scores, the mean scores for the GAD-7 and PHQ-9 were in the mild range (Lowe, Decker, Muller, Braher, Schellberg, Herzog, & Herzberg, 2008; Kroenke, Spitzer, & Williams, 2001). Mean scores for the EDE-Q, BFNE and RSS were all in the non-clinical range (Fairburn & Beglin, 1994; Leary, 1983; Rector et al. 2011).

Table 1

Characteristics of the sample

Measure	**Mean**	**(SD)**	**Cronbach's *alpha***
Age (years)	27.76	(9.79)	-
Body mass index	23.73	(5.37)	
Generalised Anxiety Disorder – 7	6.70	(5.34)	.911
Patient Health Questionnaire-9	6.97	(5.58)	.869
Brief Fear of Negative Evaluation scale	38.60	(9.94)	.742
Eating Disorders Examination Questionnaire			
Restraint	1.47	(1.38)	.793
Eating Concern	.98	(1.19)	.798
Shape Concern	2.56	(1.43)	.854
Weight Concern	2.12	(1.46)	.780

Global	1.79	(1.19)	.891
Reassurance Seeking Scale			
Decision Making	38.76	(10.45)	.918
Social Attachment	20.11	(7.46)	.900
General Threat	21.46	(8.28)	.904

Factor Structure of the RSED-Q

The results of the factor analysis of the RSED-Q are provided in Table 2. The Direct Oblimin rotation provided the most meaningful factor structure. Factors were included if they had an eigenvalue above 1.0 and using scree analysis. Items were allocated to factors if they loaded above 0.4 on a factor, and their loading was at least 0.1 greater than on any other factor. This resulted in six factors, which included 25 of the original 36 items (see Appendix K for the final version).

Factor 1 (items 24, 25, 27, 28 and 30) was labelled “Active RS: body”’ and accounted for 36.60% of variance. Factor 2 (items 4, 8 and 11) was labelled “Active RS: personality” and accounted for 8.35% of variance. Factor 3 (items 14, 15, 16, 18, 19 and 20) was labelled “Passive RS: appearance and weight control” and accounted for 6.88% of variance. Factor 4 (items 1, 5, 7, 9, 12 and 13) was labelled “Active RS: appearance” and accounted for 6.09% of variance. Factor 5 (items 2, 6 and 19) was labelled “Active RS: food intake” and accounted for 4.70% of variance. Lastly, Factor 6 (35 and 36) was labelled “Evidence of excessive

reassurance seeking", as it identified negative consequences of reassurance-seeking. It accounted for 4.13% of variance.

All factors had acceptable internal consistency, as shown in Table 2 (George & Mallery, 2003). The scale scores were calculated using the item means (see Table 2). The final version of the questionnaire and a scoring key are provided in Appendix L.

Table 2

Principal Axis Factoring (Direct Oblimin rotation) of the RSED-Q for those who completed the questionnaire at Time 1 (n=167), including mean scores and internal consistency of the factors.

Item	Active RS: body	Active RS: personality	Passive RS: appearance and weight control	Active RS: appearance	Active RS: food intake	Evidence of excessive reassurance
1.They like what I am eating	-.038	.207	.018	**-.579**	.011	-.144
2.I have eaten too much	.094	.064	.065	-.173	**.654**	-.003
3.I look too thin	-.014	.110	.062	.147	.109	-.096
4.They think I am a good person	.034	**.786**	.040	-.086	-.010	-.013
5.My hair looks attractive	-.148	.246	.112	**-.575**	.171	-.052
6.They think I have taken too much food on my plate.	.058	.026	.137	-.079	**.693**	-.009
7.My outfit is suitable for the occasion	.068	.035	.058	**-.473**	.075	.002
8.They like me	.025	**.714**	-.007	-.163	-.047	-.188
9.I look attractive	.016	.387	-.059	**-.532**	-.136	-.157
10.They think I am a greedy person	.070	.141	.031	.019	**.466**	-.123
11.They think I am interesting	-.036	**.698**	.046	-.030	.228	.121
12.They think I have put on weight	.324	.014	-.044	**-.565**	.375	-.061
13.I look fat	.411	.037	.013	**-.606**	.157	-.071
14.Comment on my clothes	-.052	-.141	**.456**	-.218	-.027	.064

15.Compliment me on how much exercise I have done.	.107	.000	**.509**	.022	.047	.077
16.Compliment me on my appearance	.077	-.117	**.442**	-.292	-.132	-.035
17.Notice I've made an effort to look good	.062	-.141	.194	-.327	-.151	-.009
18.Notice that I am not eating much	.072	.171	**.577**	.129	.096	-.167
19.Notice that I am making healthy food choices	.029	.034	**.747**	.024	.105	-.033
20.Ask if I have lost weight	.103	-.036	**.452**	-.356	-.006	.056
21.Tell people that I am not a nice person, in the hope that they will argue with me	.332	.222	.093	.226	-.061	.044
22.Dress so that others will compliment me	.118	-.227	.226	-.233	-.003	.031
23.Say nice things about others' bodies, in the hope they will do the same to me.	.153	.104	.244	-.034	-.077	-.195
24.Tell people I think I have put on weight in the hope they will reassure me that I haven't	**.651**	-.044	.139	-.147	.067	-.002
25.Tell people that I haven't exercised enough, in the hope that they will reassure me that I have	**.498**	-.119	.110	.044	.269	-.067
26.Dress like others, in the hope they will compliment me	.012	-.042	-.074	.017	.219	-.028

27.Mention I am unhappy with my body in the hope they will tell me I look good	**.857**	.039	-.051	.034	-.049	-.068
28.Tell people that my body is un-toned, in the hope they argue with me	**.764**	-.095	-.007	.033	.112	.012
29.Compliment other people in the hope that they will compliment me too	.149	.169	.076	.022	-.144	.001
30.Complain to people about being fat, in the hope they will tell me I am not	**.805**	.098	.063	-.055	-.043	-.048
31.Pay very close attention to how someone is responding to me to pick up signs that they don't like me	-.021	.105	-.053	.021	.006	-.055
32.Pay very close attention to others reactions when I am food shopping to pick up signs that they disapprove of my food choices	.094	.027	.059	.221	.248	-.164
33.Pay very close attention to other reactions when I am serving food to pick up signs that they think I am health conscious	-.072	-.037	.390	.184	.330	-.144
34. Pay very close attention to how someone is looking at my appearance to pick up signs that I look okay	.072	.045	-.034	-.075	.104	-.092
35.Asked me to stop asking their opinion about how I look	.018	-.071	-.022	-.110	-.042	**-.937**

36.Told me that I ask too many questions about their opinions of me	-.002	-.025	-.001	.065	.001	**-.884**
Eigenvalue	11.016	3.005	2.476	2.190	1.689	1.487
Variance Explained	30.60	8.35	6.88	6.09	4.70	4.13
Cronbach's alpha	.894	.843	.826	.843	.778	.875
Item mean for scale	0.873	0.918	1.08	1.45	0.582	0.23
(SD)	(0.86)	(0.88)	(0.71)	(0.81)	(0.72)	(0.57)

Note: Items retained in final version of the RSED-Q are shown in bold.

Item-total correlation

Item-total correlations were examined to identify any items for deletion (Table 3). Field (2005) suggests that if any item-total correlation is below 0.3 then the item should be removed due to poor correlation with the other items in the factor. All the items across the six factors had item-total correlations above 0.4. Therefore, no item was removed when applying this criterion. It should be noted that item 18 in "Passive RS: Appearance and weight control" had the lowest item-total correlation (.488) and the alpha following deletion of this item reduced to .818. This item should be considered for possible exclusion in future validation studies.

Table 3

Item total correlations for the scales of the Reassurance-Seeking in Eating Disorders Questionnaire

Item	Corrected item-total correlation	Cronbach's alpha if item deleted
Active RS: Body		
RSED24	.749	.871
RSED25	.613	.897
RSED27	.792	.860
RSED28	.774	.865
RSED30	.791	.860
Active RS: Personality		
RSED4	.726	.765
RSED8	.743	.749
RSED11	.664	.825
Passive RS: Appearance and weight control		
RSED14	.639	.788
RSED15	.550	.808

RSED16	.677	.781
RSED18	.488	.818
RSED19	.631	.790
RSED20	.593	.798
Active RS: Appearance		
RSED1	.667	.812
RSED5	.626	.817
RSED7	.538	.833
RSED9	.574	.827
RSED12	.665	.809
RSED13	.687	.805
Active RS: Food intake		
RSED2	.627	.700
RSED6	.715	.591
RSED10	.529	.787
Active RS: Evidence of excessive reassurance seeking		
RSED35	.790	-
RSED36	.790	-

Associations of Reassurance Seeking with Individual Characteristics

Tables 4 and 5 show the result of paired sample t-tests and Pearson's correlations, used to determine the association of the six RSED-Q scales and demographic characteristics, including gender, age and Body Mass Index (BMI). Table 4 shows that "Active RS: body" and "Active RS: appearance" are the only scales in the questionnaire that differed between genders, with females scoring significantly higher than males in each case.

Table 4

Independent samples t-test comparing Reassurance-Seeking in Eating Disorders Questionnaire scale scores across genders (Female n=123; Male n=42).

RSED-Q subscale	**Gender**	**Mean (SD)**	**t**	**P**
Active RS: body	Female	0.95 (0.88)	2.13	**.034**
	Male	0.63 (0.75)		
Active RS: personality	Female	0.93 (0.93)	0.547	.585
	Male	0.84 (0.71)		
Passive RS: appearance and	Female	1.12 (0.73)	1.08	.280
weight control	Male	0.98 (0.64)		
Active RS: appearance	Female	1.60 (0.77)	4.298	**.001**
	Male	1.01 (0.74)		
Active RS: food intake	Female	0.59 (0.70)	0.293	.770
	Male	0.56 (0.80)		
Evidence of excessive	Female	0.23 (0.60)	0.254	.800
reassurance	Male	0.20 (0.41)		

Note: RSED-Q = Reassurance-seeking in eating disorders questionnaire; SD= Standard Deviation

Table 5 shows that age was negatively associated with all the RSED-Q scales, apart from “Active RS: body” and “Evidence of excessive reassurance seeking”. Thus, older people seek reassurance less in most of the RSED-Q domains. Additionally, BMI was not significantly correlated with any of the RSED-Q scales, suggesting the RSED-Q can be applied transdiagnostically across eating disorders.

Table 5

Pearson's correlation (r) of Reassurance-Seeking in Eating Disorders Questionnaire scale score with age and Body Mass Index (BMI) (n=167).

RSED-Q subscale	**Age**		**BMI**	
	r	**p**	***r***	**P**
Active RS: body	-.116	.136	-.033	.675
Active RS: personality	-.287	.001	.039	.614
Passive RS: appearance and weight control	-.222	.004	.116	.136
Active RS: appearance	-.266	.001	.086	.270
Active RS: food intake	-.172	.026	.125	.106
Evidence of excessive reassurance	-.091	.241	.007	.325

Note: RSED-Q= Reassurance Seeking in Eating Disorders Questionnaire.

Concurrent Validity

Pearson's correlations were used to determine the associations of the six factors of the RSED-Q and the three subscales of the Reassurance Seeking Scale. These are presented in Table 6.

Table 6

Pearson's correlations (r) between the Reassurance-Seeking in Eating Disorders Questionnaire scales and the Reassurance-Seeking Scale subscales (n=156)

	RSS subscales		
RSED-Q scales	**Decision Making**	**Social Attachment**	**General Threat**
Active RS: body	.287**	404**	.297**
Active RS: personality	.208**	.436**	.278**
Passive RS: appearance and weight control	.264**	.255**	.391**
Active RS: appearance	.276**	.363**	.278**
Active RS: food intake	.155	192*	.209**
Evidence of excessive reassurance	.179*	.346**	.181*

Note: RSED-Q = Reassurance-seeking in eating disorders questionnaire; RSS = Reassurance-Seeking Scale; * $p < 0.05$ **; $p < 0.015$

All the RSED-Q scales correlated significantly with the different subscales of the RSS, except for RSED-Q 'Active RS: food intake' and RSS 'decision-making'. Although the correlations are significant, they are moderate. This suggests that the concurrent validity of the RSED-Q is moderate but not complete, as the two measures do not overlap excessively.

Test-Retest Reliability

In order to determine whether the RSED-Q is stable over time, test-retest reliability was undertaken using Pearson's correlations and paired samples t-tests for all participants who completed both time 1 and 2 of the RSED-Q (see Table 7). The strong correlations and the lack of significant differences between mean scores demonstrates that all RSED-Q scales are reliable and stable over time.

Table 7

Pearson's correlations (r) and paired samples t-test between all participants who completed the Reassurance Seeking in Eating Disorder Questionnaire at both Time 1 and Time 2 (n=63).

RSED-Q subscales	**Mean T1 (SD)**	**Mean T2 (SD)**	**t**	**p**	**r**
Active RS: body	0.82 (0.77)	0.83 (0.85)	0.115	.909	.860*
Active RS: personality	0.75 (0.82)	0.71 (0.75)	0.582	.562	795*
Passive RS: appearance and weight control	1.03 (0.68)	1.02 (0.68)	0.142	.888	.785*
Active RS: appearance	1.35 (0.75)	1.35 (0.78)	0.048	.962	834*
Active RS: food intake	0.50 (0.66)	0.49 (0.63)	0.089	930	737*
Evidence of excessive reassurance	0.20 (0.44)	0.11 (0.29)	1.746	.086	.461*

*Note: RSED-Q= Reassurance-seeking in eating disorders questionnaire; * P* < .001

Clinical Validation

Pairwise correlations

To assess the clinical validity of the RSED-Q, Pearson's correlations were undertaken initially, prior to multiple regressions. In the correlations, bivariate associations were conducted between the RSED-Q scales and the measures of general and eating pathology (GAD-7, PHQ-9, BFNE, EDEQ). Due to the risk of type 1 errors, a *p* value of < .01 was adopted for these correlations.

Table 8 shows that eating pathology and fear of negative evaluation were related broadly to all the RSED-Q scales, whilst anxiety and depression were more related to specific RSED-Q scales (Active RS: personality; Evidence of excessive reassurance). As the correlations with the EDE-Q subscales were very similar to the pattern with the EDE-Q Global scale, only the Global scale was used as a dependent variable in the subsequent multiple regression analyses.

Table 8

Pearson's correlations between the RSED-Q factors and clinical measures

	RSED-Q scales					
Clinical measures	Active RS: body	Active RS: personality	Passive RS: appearance & weight control	Active RS: appearance	Active RS: food intake	Evidence of excessive reassurance
GAD-7	.147	.289**	.104	.128	.161	.202*
PHQ-9	.175	.266*	.083	.066	.204*	.249*
BFNE	.312**	.258*	.312**	.307**	.253*	.280**
EDEQR	.403**	.121	.288**	.380**	.235*	.115
EDEQEC	.408**	.290**	.235*	.312**	.428**	.134
EDEQSC	.542**	.232*	.311**	.422**	.395**	.242*
EDEQWC	.487**	.240*	.316**	.416**	.370**	.213*
EDEQ-Global	.532**	.253*	.335**	.448**	.410**	.216*

p<.01*; *p*<.001**;

(*Note: RSED-Q= Reassurance seeking in eating disorders questionnaire; RSS= Reassurance Seeking Scale; GAD=General Anxiety Disorder-7; PHQ=Patient Health Questionnaire-9; BFNE= Brief Fear of Negative Evaluation Scale; EDEQR= Eating disorder examination questionnaire, restraint subscale; EDEQEC- Eating disorder examination questions, eating concern subscale; EDEQSC= Eating disorder examination questionnaire, shape concern subscale; EDEQWC= Eating disorder examination questionnaire, weight concern subscale; EDEQTOTAL= Eating disorder examination questionnaire total score.)*

Multiple Regression Analyses

Table 9 shows the result of multiple regression analyses (simultaneous entry method), which were used to determine which aspects of reassurance-seeking form the most parsimonious set of predictors of eating pathology and other clinical features. The scores for the six RSED-Q scales and the three subscales of the RSS were entered as independent variables for each of the dependent variables (EDE-Q Global, GAD-7, PHQ-9 and BFNE). Each analysis is summarised below.

All the dependent variables were significantly related to reassurance seeking, but in different ways. Eating pathology (EDE-Q Global score) was explained only by the RSED-Q, with two scales being responsible (Active RS: body and Active RS: appearance). Therefore, active reassurance-seeking about physical characteristics was key to understanding a substantial proportion of variance in eating pathology (32.8%).

In contrast, anxiety (GAD-7) and depression (PHQ-9) were associated with both RSED-Q scales and with the RSS General Threat scale, which accounted for 26.0% of anxiety and 24.0% of depression. It is noteworthy that the association of the RSED-Q with the PHQ-9 was in different directions for the two scales. So, in both cases, anxiety and depression were worse when the individual sought reassurance about general threat and about their personality, but the level of depression was higher when the person sought less reassurance about their appearance. This negative association might be explained by more depressed individuals being less likely to be concerned about their appearance.

Finally, social anxiety (BFNE) was not linked to the RSED-Q scales. Instead, it was linked to the two most relevant RSS scales (Social Attachment;

Decision Making). Between them, these two aspects of reassurance-seeking accounted for 37.2% of social anxiety.

Table 9

Multiple regression using the RSED-Q and RSS scales as predictors of the EDE-Q, RSS, GAD-7, PHQ-9, and BFNE.

Independent variables	**t**	***P***	**Beta**
EDE-Q Global*;* n=160, F(*df*=9, 155)= 9.393, *p* = .001, adjusted R^2=.328			
RSED-Q Active RS: body	**3.829**	**.001**	**.341**
RSED-Q Active RS: personality	.128	.898	.011
RSED-Q Passive RS: appearance and weight control	-.925	.356	-.079
RSED-Q Active RS: appearance	**2.019**	**.045**	**.172**
RSED-Q Active RS: food intake	1.805	.073	.150
RSED-Q Evidence of excessive reassurance	-.170	.866	-.013
RSS Decision Making	1.660	.099	.159
RSS Social Attachment	.039	.969	.075
RSS General Threat	.715	.476	.075
GAD-7 n=167, F(df=9, 155)=7.044, *p*=.001, adjusted R^2=.260			
RSED-Q Active RS: body reassurance seeking	1.286	.200	.120
RSED-Q Active RS: personality	**3.266**	**.001**	**.281**
RSED-Q Passive RS: appearance and weight control	-1.658	.099	-.148
RSED-Q Active RS: appearance	-1.358	.176	-.122
RSED-Q Active RS: food intake	.471	.638	.041
RSED-Q Evidence of excessive reassurance	.293	.770	.023
RSS Decision Making	1.480	.141	.146
RSS Social Attachment	-1.898	.060	-.205
RSS General Threat	**4.259**	**.000**	**.467**

PHQ-9 n=167, F(df=9, 155)=6.434, *p*=.001, adjusted R^2=.240			
RSED-Q Active RS: body	1.721	.087	.163
RSED-Q Active RS: personality	**3.204**	**.002**	**.280**
RSED-Q Passive RS: appearance and weight control	-1.648	.102	-.149
RSED-Q Active RS: appearance	**-2.648**	**.009**	**-.240**
RSED-Q Active RS: food intake	1.359	.176	.120
RSED-Q Evidence of excessive reassurance	1.024	.308	.081
RSS Decision Making	1.773	.078	.177
RSS Social Attachment	-1.618	.108	-.177
RSS General Threat	**3.161**	**.002**	**.351**
BFNE n=164 F(df9, 155)=11.187, *p*=.001, adjusted R^2=.372			
RSED-Q Active RS: body	.340	.735	.029
RSED-Q Active RS: personality	.284	.777	.023
RSED-Q Passive RS: appearance and weight control	1.061	.291	.087
RSED-Q Active RS: appearance	.495	.621	.041
RSED-Q Active RS: food intake	.705	.482	.057
RSED-Q Evidence of excessive reassurance	.707	.480	.051
RSS Decision Making	**4.121**	**.001**	**.374**
RSS Social Attachment	**2.303**	**.023**	**.229**
RSS General Threat	-.127	.899	-.013

Note: Significant scores are presented in bold. RSED-Q= Reassurance seeking in eating disorders questionnaire; RSS= Reassurance Seeking Scale; GAD-7=General Anxiety Disorder-7; PHQ-9=Patient Health Questionnaire-9; BFNE= Brief Fear of Negative Evaluation Scale; EDEQ Global = Eating disorder examination questionnaire total score.

To summarise, as hypothesised, eating/appearance reassurance-seeking (as measured by the RSED-Q) has a specific role in understanding eating pathology, while more generic reassurance-seeking is more suited to understanding social anxiety. However, both elements of reassurance-seeking are useful in understanding general anxiety and depression.

Supplementary analysis: Potential utility of the RSED-Q "Evidence of excessive reassurance seeking" scale

This brief scale (two items) captured a key issue – how others react to the individual who is seeking reassurance. A small proportion of people (N = 9) scored at least 1 on these two items combined, indicating that they had had a negative interpersonal response to having sought reassurance. Scores on the measures were compared (independent samples t-tests) to determine whether such a negative interpersonal reaction was linked to higher levels of reassurance-seeking and psychopathology.

Table 9 shows the results of those analyses. It demonstrates that people who had had any negative reaction to their reassurance-seeking reported more depression, eating pathology and social anxiety, but the difference in their general anxiety level did not achieve significance. The other feature of note is that most of the RSED-Q scale scores were higher among those who had received a negative response, apart from the passive reassurance-seeking scale (which is less likely to evoke such an interpersonal reaction). However, that was not generally true for the RSS, where only the General Threat scale was higher among those who had experienced such a negative interpersonal response to their reassurance-seeking.

Table 9

Independent samples t-tests comparing levels of reassurance-seeking and psychopathology among individuals who had or had not experienced a negative interpersonal reaction to their reassurance seeking.

	Evidence of excessive reassurance seeking	**N**	**Mean(SD)**	**t**	**p**
Active body reassurance seeking	Yes	9	1.64 (0.65)	2.838	.005
	No	158	0.83 (0.85)		
Active personality reassurance seeking	Yes	9	1.81 (0.56)	3.246	.001
	No	158	0.87 (0.86)		
Passive appearance and weight control reassurance seeking	Yes	9	1.50 (0.70)	1.825	.070
	No	158	1.06 (0.71)		
Active appearance reassurance seeking	Yes	9	2.35 (0.54)	3.545	.001
	No	158	1.40 (0.79)		
Active food intake reassurance seeking	Yes	9	1.56 (1.00)	4.381	.000
	No	158	0.53 (0.66)		
GAD-7 Total	Yes	9	10.00 (5.59)	1.922	.056
	No	158	6.51 (5.28)		
PHQ-9TOTAL	Yes	9	12.56 (5.61)	3.170	.002
	No	158	6.65 (5.43)		
BFNETOTAL	Yes	9	47.44 (9.67)	2.803	.006
	No	155	38.09 (9.74)		
EDE-QTOTAL	Yes	8	2.60 (0.44)	2.004	.047
	No	152	1.74 (1.20)		
RSSDM	Yes	8	43.88 (7.57)	1.425	.156
	No	148	38.49 (10.53)		
RSSSA	Yes	8	26.86 (5.46)	2.685	.008
	No	148	19.74 (7.40)		
RSSGT	Yes	8	24.50 (8.88)	1.069	.287
	No	148	21.29 (8.25)		

p<.05*; *p*<.01**; *p*<.001***

Discussion

This study aimed to develop and validate a new measure for reassurance-seeking – the RSED-Q. The measure is specific to eating pathology. This discussion will outline the main findings of the research, linking them to existing

research and theory, and will examine the limitations of this study, as well as directions for future research and clinical practice.

Main findings

The RSED-Q had a clear and meaningful factor structure, strong internal consistency, good test-retest reliability, acceptable concurrent validity, and strong clinical validation. The RSED-Q had much stronger relevance to eating pathology than the more generic RSS, but the opposite was true for social anxiety. Thus, the RSED-Q has demonstrated the hoped-for outcome, of being more useful in explaining eating pathology than existing measures of reassurance-seeking.

Relationship to the literature

This research builds on the existing literature around eating pathology and reassurance-seeking. Previous work has shown weaker links between reassurance-seeking and eating pathology (Kwan et al., 2017; Mason et al. 2016; Selby et al., (2008). However, the present findings demonstrate that those weaker associations were the result of using generic reassurance-seeking measures, rather than because reassurance-seeking is less important in eating disorders.

It is also important to note that the measure of general reassurance seeking (the RSS) had greater strengths than the RSED-Q when it came to understanding social anxiety. Therefore, general reassurance-seeking and eating-specific reassurance-seeking have different clinical relevance and utility. However, the fact that both measures played a role in explaining anxiety and depression suggests that those disorders might manifest and be reinforced by much wider patterns of reassurance-seeking than either eating pathology or social anxiety.

Relationship to theory

Reassurance-seeking in eating disorders as a safety behaviour. Individuals engage in safety behaviours to prevent them from experiencing difficult emotions or consequences. The enactment of these behaviours serves to maintain them and prevent change (Salkovskis, 1991; Gelder, 1997). A behaviour is likely to be maintained if it removes something negative, such as a distressing feeling (Skinner, 1971). Moreover, the urge to seek reassurance in anxiety and depression has been suggested to be precipitated by feelings of anxiety, sadness, and general threat (Parrish & Radomsky, 2010; Salkovskis & Kobori, 2015). Therefore, reassurance-seeking might regulate emotions in the short-term, but individuals will then not learn to cope without the support of others, meaning that the behaviour continues. The findings of the current research support the idea that reassurance-seeking could be a safety behaviour in eating pathology, as it was linked to both higher levels of anxiety and depression – common comorbidities with eating disorders.

Body and appearance reassurance-seeking related to social comparison. Individuals engage in social comparison with those who they view as “higher” or “lower” than them, comparing both their weight and appearance to those around them (Heinberg & Thompson, 1992; Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999). Social comparisons to those who are seen as “higher” motivate individuals to change, and to develop personal aspirations. Social comparison to those who are seen as “lower” is used by individuals to enhance self-esteem. If individuals feel inferior to others, they will seek reassurance and validation that they are not, whilst simultaneously dismissing this feedback

(Joiner, Alfano & Metalsky, 1992). As the reassurance received does not fit with the individuals own understanding of themselves, it is rejected (Beck, 2002).

The findings of this research suggest that reassurance-seeking can make individuals feel worse about their body and appearance. The worse an individual feels about themselves, the more they may engage in reassurance-seeking. This may result in them placing themselves further down the social comparison 'ladder', meaning there are fewer people below them who they can use to try to help them feel better about themselves.

***Reassurance-seeking as a form of intermittent reinforcement*.** Intermittent reinforcement is behavioural conditioning where the desired consequence of a behaviour is applied sporadically. A behaviour will continue due to the sporadic nature of the reinforcement (Lerman, Iwata, Shore, & Kahng, 1996) The findings of this research support this theory. Those who had had a negative reaction from others due to their reassurance-seeking continued to undertake more reassurance-seeking, despite having greater levels of eating pathology, depression, and social anxiety (although these levels were still at normative levels). This finding is compatible with the principle that reassurance is a form of intermittent reinforcement, in which individuals may not always receive relief from their distressing feelings. Others may tire of offering reassurance, or the reassurance offered might not fit with their currently held views of themselves. The result appears to be that they feel worse about themselves, and therefore work harder for reassurance (e.g., shifting from passively seeking reassurance to active reassurance-seeking).

Limitations and considerations for future research

This research recruited a non-clinical population, excluding participants on the grounds of any historical or current eating disorder or current treatment of a mental health difficulty. Additionally, the majority of those who participated were young adult females. Therefore, the findings cannot be assumed to be generalisable to clinical populations. Future research should aim to build on the results of this research, particularly through recruitment of a clinical population. Additionally, results indicated that participants who are older engage in less reassurance-seeking, which might also mean that the findings are not equivalent across age groups. Future research should examine this possibility further, recruiting a wider range of ages. Similarly, research has found that white women are more likely to experience eating disorders (Botta, 2000). Future studies should consider the potential role of ethnicity in the use and impact of reassurance-seeking.

The exclusion of anyone with a history of mental health difficulties also resulted in lower levels of completion of the measures than expected. Although sample size was deemed adequate for analysis, future research should aim to recruit a larger sample size. It should consider whether it is meaningful to screen out or include those who have recovered from eating disorders or are experiencing other mental health difficulties.

It is important to note that the correlational design used here does not allow for interpretation of the causal link between reassurance-seeking and eating pathology. It is therefore possible that there are confounding factors that influenced these findings, and these should be considered in future research (e.g., cross-cultural comparisons). Experimental designs would provide firmer

information about the role of reassurance-seeking as a causal/maintaining factor in eating problems.

The finding that reassurance-seeking was associated with more negative social reactions indicates that it is also necessary to consider the impact of reassurance-seeking on other people. Therefore, future research should recruit those who are around the individual, to determine the pattern of impact of reassurance-seeking on those individuals, and how they respond to the individual.

Clinical implications

This research provides evidence to suggest that reassurance-seeking is associated with eating pathology. This research should be replicated with clinical populations prior to being incorporated into clinical practice. However, should such research confirm these associations, this knowledge could be incorporated into psychoeducation and prevention approaches to reduce the risk of developing eating disorders and negative body image. Furthermore, if these findings are replicated with individuals suffering from eating disorders, the new information could be incorporated into assessment, formulation, and interventions for clinical populations.

Awareness of the possible role of reassurance-seeking in the maintenance of eating pathology means that eating disorder clinicians should consider exploring at assessment whether the patient engages in this behaviour. Clinicians should also be aware of reassurance-seeking in the session, and use examples when it occurs to illustrate the patient's patterns of safety behaviours. As part of formulating the problem with the patient, that awareness allows for conversations

about reassurance-seeking being calming in the short term but problematic in the longer term.

Explaining the role of this safety behaviour allows the clinician and patient to develop treatment plans that include addressing this element of their problem. National Institute for Health Care Excellence (NICE; 2017) guidelines recommend the use of cognitive behavioural therapy for all adults with eating disorders (CBT-ED). CBT involves the implementation of behavioural experiments to test beliefs about the usefulness of safety behaviours (Clark, 1999). In working with eating disorders, that can involve experimenting with symptoms by changing elements such as diet and body-image behaviours. Understanding that reassurance-seeking in eating disorders is a safety behaviour allows clinicians and clients to conduct behavioural experiments in which a person tests out their beliefs of what will happen if they do not seek reassurance, and compare the short and long-term outcomes to when they do. Finally, if the RSED-Q is further validated in clinical groups, then it can be suggested as an assessment and evaluation tool in routine clinical practice.

Conclusions

This research has developed and validated a new measure of reassurance-seeking in eating disorders – the RSED-Q. It has shown that reassurance-seeking in relation to eating and body image is multi-faceted, with passive and active elements. Most importantly, this new measure has shown that eating pathology is better explained by a disorder-specific approach to understanding reassurance-seeking than by using models that were developed to explain other disorders. While further research is needed to establish these associations and the utility of the RSED-Q in a clinical population, these findings

indicate that reassurance-seeking is likely to be a useful target in clinical and prevention work relating to eating disorders and body image disturbance.

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Appendices

Appendix A: Ethical Approval

The University Of Sheffield.

Downloaded: 09/04/2019
Approved: 09/04/2019

Amelia Woodhouse
Registration number: 170149330
Psychology
Programme: Doctorate of Clinical Psychology

Dear Amelia

PROJECT TITLE: The development and validation of a reassurance-seeking questionnaire specific to eating disorders: The RSED-Q
APPLICATION: Reference Number 025071

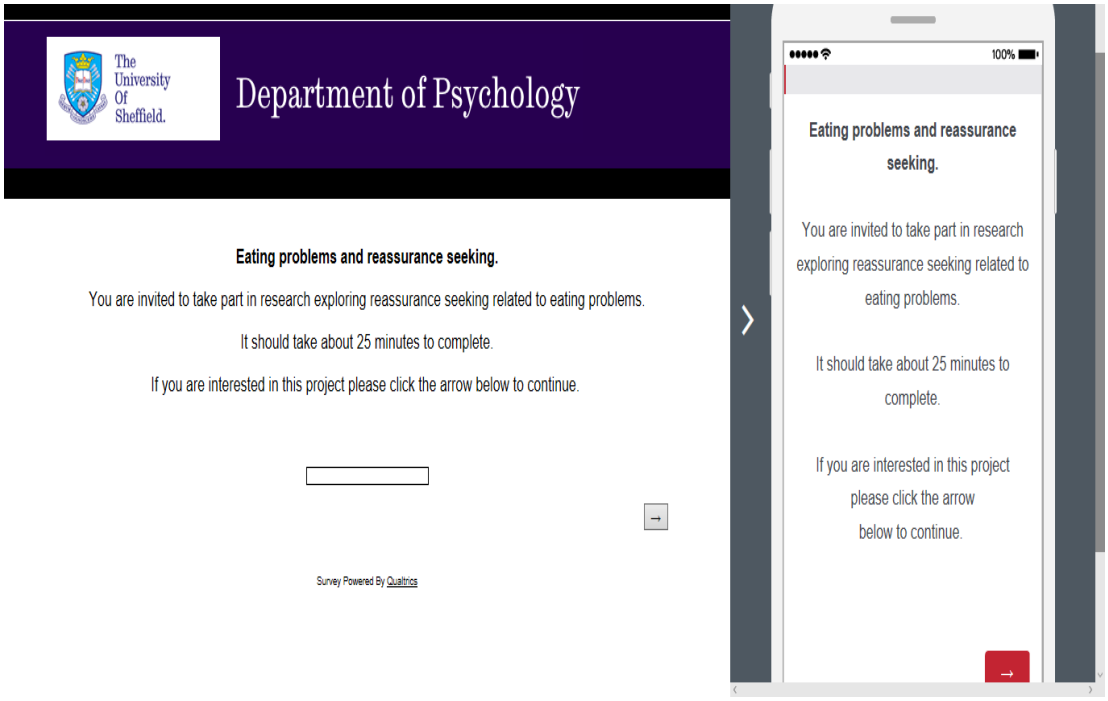
On behalf of the University ethics reviewers who reviewed your project, I am pleased to inform you that on 09/04/2019 the above-named project was **approved** on ethics grounds, on the basis that you will adhere to the following documentation that you submitted for ethics review:

- University research ethics application form 025071 (dated 03/04/2019).
- Participant information sheet 1056962 version 1 (26/02/2019).
- Participant information sheet 1056961 version 1 (26/02/2019).
- Participant consent form 1056958 version 1 (26/02/2019).

If during the course of the project you need to deviate significantly from the above-approved documentation please inform me since written approval will be required.

Yours sincerely

Jilly Gibson-Miller
Ethics Administrator
Psychology



Information sheet

The development and validation of a reassurance seeking questionnaire specific to eating disorders: The RSED-Q

You are being invited to participate in a research project. Before you decide if you want to take part in it, it is important to understand why this research is being conducted and what it will involve. Please take the time to read the following information carefully, you can discuss it with others should you with. You can contact the researchers should you have any questions, if something is not clear or if you would like additional information. It is your decision to decide whether you wish to participate. Thank you for taking the time to read this information sheet.

What is the project's purpose?

This project aims to develop and validate a reassurance seeking questionnaire specific to eating disorders.

Why have I been invited?

You have been invited to participate because you are aged between 18-65, and because you responded to the advertisement to participate.

Do I have to take part?

Participation in this research is entirely voluntary and it is up to you to decide if you wish to take part or not. Should you decide you want to take part, this information sheet is yours to keep. You will be asked to sign a consent form detailing your desire to participate, however, you have the right to withdraw from the research at any time* without any negative consequences. Should you wish to withdraw from the research you can do so by contacting Amelia Woodhouse (awoodhouse2@sheffield.ac.uk).

**it may not be possible to withdraw from the research once your data has been collected and anonymised, however, you can still withdraw from future collection of data.*

What will happen to me if I take part?

Should you choose to take part in the research you will be invited to complete several questionnaires. These questionnaires will look at:

Reassurance seeking that is related specifically to eating disorder behaviours (RSED-Q).

- Levels of anxiety
- Levels of depression
- Levels of social anxiety
- Eating disorder behaviours
- Reassurance seeking

Should you wish to, you can also sign up to complete the RSED-Q at a second time point, two weeks after completion of the initial questionnaire.

What are the possible disadvantages and risks of taking part?

There is a possibility that some questionnaires could increase distress. It is important that you look after yourself throughout. You can take as much time as you want to complete the questionnaires, taking breaks throughout. You can contact the University Health Service at any point should you need additional support.

What are the benefits of taking part?

No questionnaire exists that can identify eating disorder specific reassurance-seeking. This research aims to develop and validate a reassurance-seeking measure specific to eating disorders that could be used in services to support people with the hope of improving treatment outcomes for those experiencing an eating disorder.

Will all the information be kept confidential?

Upon consenting to participate you will be asked to generate a unique identification number for yourself. This will replace your name and will be stored

separately to any identifying details you provide about yourself. Should you wish to complete the RSED-Q at time point two; your email address will be stored to ensure this is possible. Your email address will stored separately to any other identifying information and will be deleted upon completion of the study.

The University of Sheffield will act as the Data Controller for this study. This means that the University is responsible for looking after your information and using it properly.

In order to collect and use your personal information as part of this research project, we must have a basis in law to do so. The basis that we are using is that the research is 'a task in the public interest'

What will happen to the data collected, and the results of the research project?

This research is being conducted as part of a thesis to fulfil the requirements of Amelia's Doctoral Training in Clinical Psychology (DClinPsy). It is also being conducted in collaboration with the Centre for Clinical Interventions, Perth. None of your personal information will be transferred to our Perth colleagues, however, anonymised, password protected, data may be.

The results of the research will be written up as a thesis and may be disseminated in the form of a research paper or poster presentation.

What if I wish to complain about the way the study has been carried out?

If you wish to make a complaint about how this study has been conducted you can email the research supervisor, Professor Glenn Waller (g.waller@sheffield.ac.uk).

Following this, should you feel your complaint has not been satisfactorily dealt with you can contact the University's Registrar and Secretary Dr Andrew West (Email: registrar@sheffield.ac.uk and Tel (0114) 222 1051)

Contact for further information

If you have any questions regarding the research, please contact the Research Support Officer on 0114 222 6650 who will take a message and ask Amelia to contact you.

Please feel free to print and keep this information sheet as well as a copy of your consent form.

I want to thank you in advance for taking part in this project.

Appendix C: Consent Form

1. I confirm that I have read and understand the information sheet explaining the above research project and I have had the opportunity to ask questions about the project.

2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason and without there being any negative consequences. In addition, should I not wish to answer any particular question or questions, I am free to decline. *Contact Amelia Woodhouse (awoodhouse2@sheffield.ac.uk).*

3. I understand that my responses will be kept confidential. I give permission for members of the research team to have access to my anonymised responses. I understand that my name will not be linked with the research materials, and I will not be identified or identifiable in the report or reports that result from the research.

4. I agree for the data collected from me to be used in future research

I have read the above statements and I give my consent to take part in this research

- ○ Yes
- ○ No

Appendix D: Debrief

Thank you again for completing these questionnaires. This research aims to develop and validate a new measure of reassurance seeking specific to eating disorders (the RSED-Q).

Anxiety, depression and eating disorders can occur together and one way this might happen is through the use of safety behaviours. Safety behaviours maintain difficulties as they relieve distress in the short term, but in the long term do not provide opportunities to disprove beliefs leading to continued distress. Previous research has shown that safety behaviours can also maintain eating disorders. Reassurance seeking is one safety behaviour that could maintain eating disorders.

This research developed a questionnaire that can be used to identify reassurance seeking within eating disorders. You completed this questionnaire along with questionnaires measuring anxiety, depression, social anxiety, and eating pathology. This was to see if there was a relationship between the reassurance-seeking in eating disorders questionnaire and these other measures.

If completing these questionnaires caused you distress and you feeling you need to speak with someone, please contact the **University Health Service** on **T: 0114 222 2100**, F: 0114 222 2123, **E: health.service@sheffield.ac.uk**, Secure NHS email: **SHECCG.UniversityHealthService@nhs.net** or contact the **University Counselling Service** on (**0114) 222 4134.**

If you have any questions about the research or wish to request the results of the project, please do not hesitate to contact Amelia Woodhouse, Trainee Clinical Psychologist(awoodhouse2@sheffield.ac.uk), or Glenn Waller, Research Supervisor(g.waller@sheffield.ac.uk).

I wish to thank you again for your participation in this project. Please feel free to print a copy of this debrief sheet.

THANK YOU

Appendix E: Adverts sent out across recruitment

Advert disseminated within the University of Sheffield

Understanding eating concerns and body image

We are researching factors that might explain why some people worry about their eating and body image. You will be in with the chance to win a £50 Amazon voucher.

As part of that work, we are exploring the effects of how we seek reassurance about ourselves. We would be very grateful if you would consider taking part in this research by completing some online questionnaires. Long-term, we hope that this work will help with our wider research into targeting treatments for eating disorders. You can be any age or gender, as long as you are at least 18 years old. You will also be asked to consider volunteering for a brief follow-up.

Please click on the link below for more information. Your participation is much appreciated.

Amelia Woodhouse (Clinical Psychology Doctorate student)

Glenn Waller (Professor of Clinical Psychology)

https://sheffieldpsychology.eu.qualtrics.com/jfe/form/SV_78KIANk7PztYaEJ

Let me know if you think it's good to go once you have checked over the advert and the new added box.

Many thanks,

Amelia

Advert disseminated to UK wide Doctorate of Clinical Psychology Courses

To whom this may concern,

I am writing to see if any of your trainees would be interested in participating in my research. I am a third year trainee at the University of Sheffield and have been having some difficulty recruiting the numbers of participants that I need for my thesis research. Participation is entirely voluntary and the project has approval through the Research Ethics Committee at the Department of Psychology at the University of Sheffield. As this project already has ethical approval this project should only be advertised to your trainees if you do not require additional scientific or ethical approval at your own university.
Below is the advert that has been circulated to students at the University of Sheffield:

Understanding eating concerns and body image - chance to win an Amazon voucher

We are researching factors that might explain why some people worry about their eating and body image. You will be in with the chance to win a £50 Amazon voucher.

As part of that work, we are exploring the effects of how we seek reassurance about ourselves. We would be very grateful if you would consider taking part in this research by completing some online questionnaires. Long-term, we hope that this work will help with our wider research into targeting treatments for eating disorders. You can be any age or gender, as long as you are at least 18 years old. You will also be asked to consider volunteering for a brief follow-up.

Please click on the link below for more information. Your participation is much appreciated.

https://sheffieldpsychology.eu.qualtrics.com/jfe/form/SV_78KIANk7PztYaEJ

Amelia Woodhouse (Clinical Psychology Doctorate student)
Glenn Waller (Professor of Clinical Psychology)"

I want to thank you in advance for your help and support.

Amelia Woodhouse
Third year Trainee Clinical Psychologist at the University of Sheffield

Appendix F: Reassurance Seeking in Eating Disorders Questionnaire (RSED-Q) (Draft version)

Reassurance Seeking in Eating Disorders Questionnaire (RSED-Q)

Rate how often you do the following…

Ask people whether…	**Never**	**Rarely**	**Sometimes**	**Often**	**All the time**
1. They like what I am wearing	0	1	2	3	4
2. I have eaten too much	0	1	2	3	4
3. I look too thin	0	1	2	3	4
4. They think I am a good person	0	1	2	3	4
5. My hair looks attractive	0	1	2	3	4
6. They think I have taken too much food on my plate.	0	1	2	3	4
7. My outfit is suitable for the occasion	0	1	2	3	4
8. They like me	0	1	2	3	4
9. I look attractive	0	1	2	3	4
10. They think I am a greedy person	0	1	2	3	4
11. They think I am interesting	0	1	2	3	4
12. They think I have put on weight	0	1	2	3	4
13. I look fat	0	1	2	3	4
Put myself in a position with other people where I hope that they will spontaneously…					
14. Comment on my clothes	0	1	2	3	4
15. Compliment me on how much exercise I have done.	0	1	2	3	4
16. Compliment me on my appearance	0	1	2	3	4
17. Notice I've made an effort to look good	0	1	2	3	4
18. Notice that I am not eating much	0	1	2	3	4
19. Notice that I am making healthy food choices	0	1	2	3	4
20. Ask if I have lost weight	0	1	2	3	4
How often do I…					
21. Tell people that I am not a nice person, in the hope that they will argue with me	0	1	2	3	4
22. Dress so that others will compliment me	0	1	2	3	4

23. Say nice things about others' bodies, in the hope they will do the same to me.	0	1	2	3	4
24. Tell people I think I have put on weight in the hope they will reassure me that I haven't	0	1	2	3	4
25. Tell people that I haven't exercised enough, in the hope that they will reassure me that I have	0	1	2	3	4
26. Dress like others, in the hope they will compliment me	0	1	2	3	4
27. Mention I am unhappy with my body in the hope they will tell me I look good	0	1	2	3	4
28. Tell people that my body is un-toned, in the hope they argue with me	0	1	2	3	4
29. Compliment other people in the hope that they will compliment me too	0	1	2	3	4
30. Complain to people about being fat, in the hope they will tell me I am not	0	1	2	3	4
31. Pay very close attention to how someone is responding to me to pick up signs that they don't like me	0	1	2	3	4
32. Pay very close attention to others reactions when I am food shopping to pick up signs that they disapprove of my food choices	0	1	2	3	4
33. Pay very close attention to other reactions when I am serving food to pick up signs that they think I am health conscious	0	1	2	3	4
34. Pay very close attention to how someone is looking at my appearance to pick up signs that I look okay	0	1	2	3	4
Others have…					
35. Asked me to stop asking their opinion about how I look	0	1	2	3	4
36. Told me that I ask too many questions about their opinions of me	0	1	2	3	4

Appendix G: Generalised Anxiety Disorder – 7

	Over the <u>last 2 weeks</u>, how often have you been bothered by any of the following problems?	Not at all	Several days	More than half the days	Nearly every day
1	Feeling nervous, anxious or on edge	0	1	2	3
2	Not being able to stop or control worrying	0	1	2	3
3	Worrying too much about different things	0	1	2	3
4	Trouble relaxing	0	1	2	3
5	Being so restless that it is hard to sit still	0	1	2	3
6	Becoming easily annoyed or irritable	0	1	2	3
7	Feeling afraid as if something awful might happen	0	1	2	3

Appendix H: Patient Health Questionnaire – 9

	Over the last 2 weeks, how often have you been bothered by any of the following problems?	Not at all	Several days	More than half the days	Nearly every day
1	Little interest or pleasure in doing things	0	1	2	3
2	Feeling down, depressed, or hopeless	0	1	2	3
3	Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4	Feeling tired or having little energy	0	1	2	3
5	Poor appetite or overeating	0	1	2	3
6	Feeling bad about yourself — or that you are a failure or have let yourself or your family down	0	1	2	3
7	Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8	Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
9	Thoughts that you would be better off dead or of hurting yourself in some way	0	1	2	3

Appendix I: Eating Disorder Examination Questionnaire (EDE-Q)

EATING QUESTIONNAIRE

Instructions: The following questions are concerned with the past four weeks (28 days) only. Please read each question carefully. Please answer all the questions. Thank you.

Questions 1 to 12: Please circle the appropriate number on the right. Remember that the questions only refer to the past four weeks (28 days) only.

.

	On how many of the past 28 days …..	No days	1-5 days	6-12 days	13-15 days	16-22 days	23-27 days	Every day
1	Have you been deliberately trying to limit the amount of food you eat to influence your shape or weight (whether or not you have succeeded)?	0	1	2	3	4	5	6
2	Have you gone for long periods of time (8 waking hours or more) without eating anything at all in order to influence your shape or weight?	0	1	2	3	4	5	6
3	Have you tried to exclude from your diet any foods that you like in order to influence your shape or weight (whether or not you have succeeded)?	0	1	2	3	4	5	6
4	Have you tried to follow definite rules regarding your eating (for example, a calorie limit) in order to influence your shape or weight (whether or not you have succeeded)?	0	1	2	3	4	5	6
5	Have you had a definite desire to have an empty stomach with the aim of influencing your shape or weight?	0	1	2	3	4	5	6
6	Have you had a definite desire to have a totally flat stomach?	0	1	2	3	4	5	6
7	Has thinking about food, eating or calories made it very difficult to concentrate on things you are interested in (for example, working, following a conversation, or reading)?	0	1	2	3	4	5	6
8	Has thinking about shape or weight made it very difficult to concentrate on things you are interested in (for example, working, following a conversation, or reading)?	0	1	2	3	4	5	6
9	Have you had a definite fear of losing control over eating?	0	1	2	3	4	5	6
10	Have you had a definite fear that you might gain weight?	0	1	2	3	4	5	6
11	Have you felt fat?	0	1	2	3	4	5	6
12	Have you had a strong desire to lose weight?	0	1	2	3	4	5	6

Questions 13-18: Please fill in the appropriate number in the boxes on the right. Remember that the questions only refer to the past four weeks (28 days).

Over the past four weeks (28 days) ……

13 Over the past 28 days, how many times have you eaten what other people would regard as an unusually large amount of food (given the circumstances)?	.....
14 ….. On how many of these times did you have a sense of having lost control over your eating (at the time that you were eating)?	.....
15 Over the past 28 days, on how many **DAYS** have such episodes of overeating occurred (i.e., you have eaten an unusually large amount of food and have had a sense of loss of control at the time)?	.....
16 Over the past 28 days, how many times have you made yourself sick (vomit) as a means of controlling your shape or weight?	.....
17 Over the past 28 days, how many times have you taken laxatives as a means of controlling your shape or weight?	.....
18 Over the past 28 days, how many times have you exercised in a "driven" or "compulsive" way as a means of controlling your weight, shape or amount of fat, or to burn off calories?	.....

Questions 19 to 21: Please circle the appropriate number. Please note that for these questions the term "binge eating" means eating what others would regard as an unusually large amount of food for the circumstances, accompanied by a sense of having lost control over eating.

19 Over the past 28 days, on how many days have you eaten in secret (ie, furtively)? ….. Do not count episodes of binge eating	No days	1-5 days	6-12 days	13-15 days	16-22 days	23-27 days	Every day
	0	1	2	3	4	5	6
20 On what proportion of the times that you have eaten have you felt guilty (felt that you've done wrong) because of its effect on your shape or weight? ….. Do not count episodes of binge eating	None of the times	A few of the times	Less than half	Half of the times	More than half	Most of the time	Every time
	0	1	2	3	4	5	6
21 Over the past 28 days, how concerned have you been about other people seeing you eat? ….. Do not count episodes of binge eating	Not at all		Slightly		Moderately		Markedly
	0	1	2	3	4	5	6

Questions 22 to 28: Please circle the appropriate number on the right. Remember that the questions only refer to the past four weeks (28 days).

	Over the past 28 days …..	**Not at all**		**Slightly**		**Moderate -ly**		**Markedly**
22	Has your weight influenced how you think about (judge) yourself as a person?	0	1	2	3	4	5	6
23	Has your shape influenced how you think about (judge) yourself as a person?	0	1	2	3	4	5	6
24	How much would it have upset you if you had been asked to weigh yourself once a week (no more, or less, often) for the next four weeks?	0	1	2	3	4	5	6
25	How dissatisfied have you been with your weight?	0	1	2	3	4	5	6
26	How dissatisfied have you been with your shape?	0	1	2	3	4	5	6
27	How uncomfortable have you felt seeing your body (for example, seeing your shape in the mirror, in a shop window reflection, while undressing or taking a bath or shower)?	0	1	2	3	4	5	6
28	How uncomfortable have you felt about others seeing your shape or figure (for example, in communal changing rooms, when swimming, or wearing tight clothes)?	0	1	2	3	4	5	6

What is your weight at present? (Please give your best estimate.) .....

What is your height? (Please give your best estimate.) .....

If female: Over the past three-to-four months have you missed any menstrual periods? .....

If so, how many? .....

Have you been taking the "pill"? .....

THANK YOU

Appendix J: Brief Fear of Negative Evaluation Scale

Please read each of the following statements carefully and indicate how characteristic it is of you, by circling the appropriate number on the scale:

	Not at all	Slightly	Moderately	Very	Extremely
I worry about what other people will think of me even when I know it doesn't make any difference.	0	1	2	3	4
I am unconcerned even if I know people are forming an unfavourable impression of me.	0	1	2	3	4
I am frequently afraid of other people noticing my shortcomings.	0	1	2	3	4
I rarely worry about what kind of impression I am making on someone.	0	1	2	3	4
I am afraid that others will not approve of me.	0	1	2	3	4
I am afraid that other people will find fault with me.	0	1	2	3	4
Other people's opinions of me do not bother me.	0	1	2	3	4
When I am talking to someone, I worry about what they may be thinking about me.	0	1	2	3	4
I am usually worried about what kind of impression I make.	0	1	2	3	4

) If I know someone is judging me, it has little effect on me.	0	1	2	3	4
) Sometimes I think I am too concerned with what other people think of me.	0	1	2	3	4

Appendix K: Reassurance Seeking in Eating Disorders Questionnaire (RSED-Q) (Final Version)

Reassurance Seeking in Eating Disorders Questionnaire (RSED-Q)

Rate how often you do the following…

Ask people whether…	**Never**	**Rarely**	**Sometimes**	**Often**	**All the time**
1. They like what I am wearing	0	1	2	3	4
2. I have eaten too much	0	1	2	3	4
3. They think I am a good person	0	1	2	3	4
4. My hair looks attractive	0	1	2	3	4
5. They think I have taken too much food on my plate.	0	1	2	3	4
6. My outfit is suitable for the occasion	0	1	2	3	4
7. They like me	0	1	2	3	4
8. I look attractive	0	1	2	3	4
9. They think I am a greedy person	0	1	2	3	4
10. They think I am interesting	0	1	2	3	4
11. They think I have put on weight	0	1	2	3	4
12. I look fat	0	1	2	3	4
Put myself in a position with other people where I hope that they will spontaneously…					
13. Comment on my clothes	0	1	2	3	4
14. Compliment me on how much exercise I have done.	0	1	2	3	4
15. Compliment me on my appearance	0	1	2	3	4
16. Notice that I am not eating much	0	1	2	3	4
17. Notice that I am making healthy food choices	0	1	2	3	4
18. Ask if I have lost weight	0	1	2	3	4
How often do I…					
19. Tell people I think I have put on weight in the hope they will reassure me that I haven't	0	1	2	3	4

20. Tell people that I haven't exercised enough, in the hope that they will reassure me that I have	0	1	2	3	4
21. Mention I am unhappy with my body in the hope they will tell me I look good	0	1	2	3	4
22. Tell people that my body is un-toned, in the hope they argue with me	0	1	2	3	4
23. Complain to people about being fat, in the hope they will tell me I am not	0	1	2	3	4
Others have…					
24. Asked me to stop asking their opinion about how I look	0	1	2	3	4
25. Told me that I ask too many questions about their opinions of me	0	1	2	3	4

Appendix L: Scoring key for the RSED-Q (for the draft version)

Factor 1: Active RS: body

(RSED24 + RSED25 + RSED27 + RSED28 + RSED30 - 5) / 5

Factor 2: **Active RS: personality**

(RSED4 + RSED8 + RSED11 - 3) / 3

Factor 3: Passive RS: appearance and weight control

(RSED14 + RSED15 + RSED16 + RSED18 + RSED19 + RSED20 - 6) / 6

Factor 4: Active RS: appearance

(RSED1 + RSED5 + RSED7 + RSED9 + RSED12 + RSED13 - 6) / 6

Factor 5: Active RS: food intake

(RSED2 + RSED6 + RSED10 - 3) / 3

Factor 6: *Evidence of excessive reassurance seeking.*

(RSED35 + RSED36 - 2) / 2

Appendix M: Scoring key for the RSED-Q (Final version)

Factor 1: Active RS: body

(RSED19 + RSED20 + RSED21 + RSED22 + RSED23 - 5) / 5

Factor 2: **Active RS: personality**

(RSED3 + RSED7 + RSED10 - 3) / 3

Factor 3: Passive RS: appearance and weight control

(RSED13 + RSED14 + RSED15 + RSED16 + RSED17 + RSED18 - 6) / 6

Factor 4: Active RS: appearance

(RSED1 + RSED4 + RSED6 + RSED8 + RSED11 + RSED12 - 6) / 6

Factor 5: Active RS: food intake

(RSED2 + RSED5 + RSED9 - 3) / 3

Factor 6: *Evidence of excessive reassurance seeking.*

(RSED24 + RSED25 - 2) / 2